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     (FILE 'HOME' ENTERED AT 09:11:37 ON 11 MAR 2005)

     FILE 'HCAPLUS' ENTERED AT 09:11:42 ON 11 MAR 2005
L1            2 (US20040047806 OR US661748 OR US20020078857)/PN
              E US2000-216933/AP,PRN
L2            2 US2000-216933P/AP,PRN
L3            2 L1-2

     FILE 'REGISTRY' ENTERED AT 09:13:04 ON 11 MAR 2005

     FILE 'HCAPLUS' ENTERED AT 09:13:06 ON 11 MAR 2005
L4              TRA L3 1- RN :      11 TERMS

     FILE 'REGISTRY' ENTERED AT 09:13:07 ON 11 MAR 2005
L5           11 SEA L4

     FILE 'WPIX' ENTERED AT 09:13:07 ON 11 MAR 2005
L6            2 (US20040047806 OR US661748 OR US20020078857)/PN
              E US2000-216933/AP,PRN
L7            2 US2000-216933P/AP,PRN
L8            2 L6-7

=> b hcap
FILE 'HCAPLUS' ENTERED AT 09:13:40 ON 11 MAR 2005
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FILE COVERS 1907 - 11 Mar 2005  VOL 142 ISS 12
FILE LAST UPDATED: 9 Mar 2005  (20050309/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


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L3   ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:203350  HCAPLUS
DN   140:219347
ED   Entered STN:  14 Mar 2004
TI   Unsymmetrical methine and polymethine dye-molecules for fluorescent
     intracellular applications
IN   Theodoropulos, Spyros
PA   USA
SO   U.S. Pat. Appl. Publ., 8 pp., Cont.-in-part of U.S. Ser. No. 899,888.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  G01N001-30
     ICS  G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
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NCL 424009600; 546268100; 546270100; 546271700; 546273400; 548121000; 546330000; 435040500
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 27
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004047806	A1	20040311	US 2003-658091	20030909 <--
	US 2002078857	A1	20020627	US 2001-899888	20010706 <--
	US 6617458	B2	20030909		
PRAI	US 2000-216933P	P	20000708 <--		
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004047806	ICM	G01N001-30
	ICS	G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
	NCL	424009600; 546268100; 546270100; 546271700; 546273400; 548121000; 546330000; 435040500
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--

AB A new class of alpha-cyanomethine and alpha-cyanopolymethine dyes is provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. Of particular interest is a class of methine mols. which are nonfluorescent in buffer solns. but intensely fluoresce when they enter a cell.

ST unsym methine polymethine dye intracellular fluorescent; cyanomethine polymethine dye prodn fluorescent label biomol

IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)

IT Fluorescent dyes
(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Cyanine dyes
(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Biochemical molecules
Biological materials
Fluorescent indicators
(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-88-8 438582-89-9
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-86-6P 438582-87-7P 438582-90-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-91-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

L3 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:487927 HCAPLUS
DN 137:48555
ED Entered STN: 28 Jun 2002
TI .alpha.-Cyanomethine and polymethine dyes for fluorescent labeling of biological substrates
IN Theodoropulos, Spyros
PA USA
SO U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09D011-00
NCL 106031450
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 27
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002078857	A1	20020627	US 2001-899888	20010706 <--
	US 6617458	B2	20030909		
	US 2004047806	A1	20040311	US 2003-658091	20030909 <--
PRAI	US 2000-216933P	P	20000708	<--	
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002078857	ICM	C09D011-00
	NCL	106031450
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00 <--

OS MARPAT 137:48555
AB Cyanomethine dyes are provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. In an example, squaric acid was condensed (1:2) with 1-(2-carboxyethyl)-4-(cyanomethyl)pyridinium iodide to give a dye with excitation maximum 627 nm and emission maximum 664 nm at pH 7.8.
ST cyanomethine polymethine dye prodn fluorescent label biomol
IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)
IT Fluorescent dyes
(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT Cyanine dyes
(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT Fluorescent indicators
(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 438582-88-8 438582-89-9
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 438582-86-6P 438582-87-7P 438582-90-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-91-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

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STRUCTURE FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1
DICTIONARY FILE UPDATES: 9 MAR 2005 HIGHEST RN 844817-50-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

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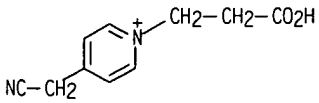
L5 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-91-3** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-(cyanomethyl)-, iodide (9CI) (CA INDEX NAME)
MF C10 H11 N2 O2 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)
CRN (738574-32-8)



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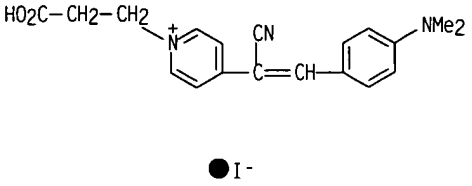
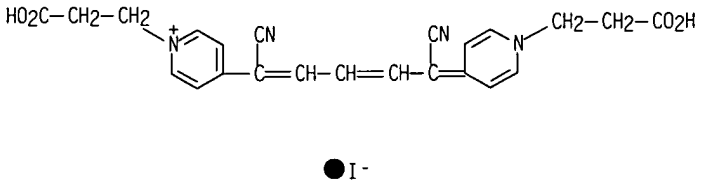
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-90-2** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)
MF C19 H20 N3 O2 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
CRN (760938-82-7)



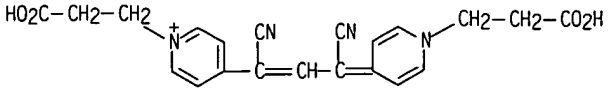
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-89-9** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[5-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,5-dicyano-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)
MF C23 H21 N4 O4 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: USES (Uses)
CRN (790201-61-5)



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

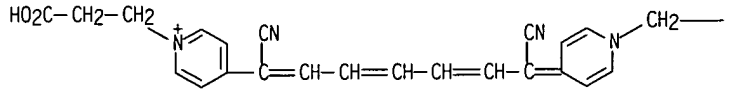
L5 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-88-8** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[3-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,3-dicyano-1-propenyl]-, iodide (9CI) (CA INDEX NAME)
MF C21 H19 N4 O4 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: USES (Uses)
CRN (754971-33-0)



2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-87-7** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[7-[1-(2-carboxyethyl)-4(1H)-pyridinylidene]-1,7-dicyano-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)
MF C25 H23 N4 O4 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
CRN (777847-35-5)

PAGE 1-A



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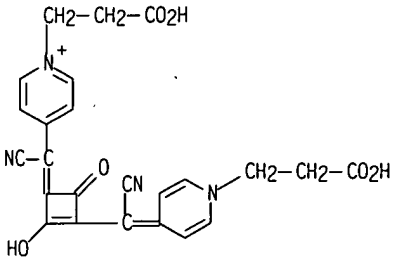
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **438582-86-6** REGISTRY
CN Pyridinium, 1-(2-carboxyethyl)-4-[[3-[[1-(2-carboxyethyl)-4(1H)-pyridinylidene]cyanomethyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]cyanomethyl]-, iodide (9CI) (CA INDEX NAME)
MF C24 H19 N4 O6 . I
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); USES (Uses)
CRN (763920-16-7)



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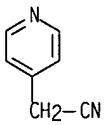
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L5 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **13121-99-8** REGISTRY
CN 4-Pyridineacetonitrile (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 4-Cyanomethylpyridine
CN 4-Pyridinylacetonitrile
CN 4-Pyridylacetonitrile
FS 3D CONCORD
MF C7 H6 N2
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, GMELIN*, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
RL.NP Roles from non-patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); NORL (No role in record)

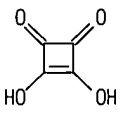


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

97 REFERENCES IN FILE CA (1907 TO DATE)
97 REFERENCES IN FILE CAPLUS (1907 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **2892-51-5** REGISTRY
CN 3-Cyclobutene-1,2-dione, 3,4-dihydroxy- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Cyclobutenedione, dihydroxy- (6CI, 7CI, 8CI)
OTHER NAMES:
CN 1,2-Dihydroxy-1-cyclobutene-3,4-dione
CN 1,2-Dihydroxycyclobutene-3,4-dione
CN 1,2-Diketo-3,4-dihydroxycyclobutene
CN 3,4-Dihydroxy-3-cyclobutene-1,2-dione

CN 3,4-Dihydroxycyclobutene-1,2-dione
CN NSC 125692
CN NSC 624671
CN Quadratic acid
CN Squaric acid
FS 3D CONCORD
DR 94592-78-6
MF C4 H2 O4
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

891 REFERENCES IN FILE CA (1907 TO DATE)
77 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
892 REFERENCES IN FILE CAPLUS (1907 TO DATE)
10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **1497-49-0** REGISTRY
CN Benzenamine, N-[5-(phenylamino)-2,4-pentadienylidene]-, monohydrochloride (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Aniline, N,N'-1,3-pentadien-1-yl-5-ylidenedi-, hydrochloride (6CI)
CN Aniline, N,N'-1,3-pentadien-1-yl-5-ylidenedi-, monohydrochloride (8CI)
OTHER NAMES:
CN Glutaconaldehyde dianil chloride
CN Glutaconaldehyde dianilide hydrochloride
CN Glutaconic aldehyde dianil hydrochloride
CN Pentadienedianiline hydrochloride
MF C17 H16 N2 . Cl H
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL

(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
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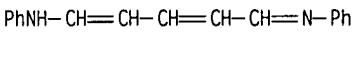
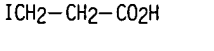


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

142 REFERENCES IN FILE CA (1907 TO DATE)
142 REFERENCES IN FILE CAPLUS (1907 TO DATE)
7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **141-76-4** REGISTRY
CN Propanoic acid, 3-iodo- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Propionic acid, 3-iodo- (6CI, 7CI, 8CI)
OTHER NAMES:
CN .beta.-Iodopropionic acid
CN 3-Iodopropanoic acid
CN 3-Iodopropionic acid
CN NSC 2124
FS 3D CONCORD
MF C3 H5 I O2
CI COM
LC STN Files: ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, GMELIN*, HODOC*, MSDS-OHS, NIOSHTIC, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Journal; Patent; Report
RL.P Roles from patents: BIOL (Biological study); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: PREP (Preparation); PRP (Properties)

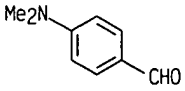


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

173 REFERENCES IN FILE CA (1907 TO DATE)

2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
173 REFERENCES IN FILE CAPLUS (1907 TO DATE)
17 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L5 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2005 ACS on STN
RN **100-10-7** REGISTRY
CN Benzaldehyde, 4-(dimethylamino)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Benzaldehyde, p-(dimethylamino)- (8CI)
OTHER NAMES:
CN 4-(Dimethylamino)benzaldehyde
CN 4-(Dimethylamino)benzenecarbonal
CN 4-(N,N-Dimethylamino)benzaldehyde
CN 4-Formyl-N,N-dimethylaniline
CN N,N-Dimethyl-4-aminobenzaldehyde
CN N,N-Dimethyl-4-formylaniline
CN N,N-Dimethyl-p-aminobenzaldehyde
CN Named reagents and solutions, Ehrlich's
CN NSC 5517
CN p-(Dimethylamino)benzaldehyde
CN p-(N,N-Dimethylamino)benzaldehyde
CN p-DAB
CN p-Formyl-N,N-dimethylaniline
CN p-Formyldimethylaniline
FS 3D CONCORD
MF C9 H11 N O
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DETHERM*, DIPPR*, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PIRA, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6222 REFERENCES IN FILE CA (1907 TO DATE)
96 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

6239 REFERENCES IN FILE CAPLUS (1907 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix
FILE 'WPIX' ENTERED AT 09:13:59 ON 11 MAR 2005
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FILE LAST UPDATED: 8 MAR 2005 <20050308/UP>
MOST RECENT DERWENT UPDATE: 200516 <200516/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
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>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
FOR DETAILS. <<<

=> d all l8 tot

L8 ANSWER 1 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-313882 [29] WPIX
CR 2003-119554 [11]
DNN N2004-249914 DNC C2004-119201
TI New unsymmetrical methane and polymethine dyes for the measurement and detection of biological compounds, e.g. bacteria, have one or two cyano groups in alpha carbon relative to nucleus of dye compounds.
DC B04 D16 E24 S03
IN THEODOROPULOS, S
PA (THEO-I) THEODOROPULOS S
CYC 1
PI US 2004047806 A1 20040311 (200429)* 8 G01N001-30 <--
ADT US 2004047806 A1 **Provisional US 2000-216933P 20000708**, CIP of US 2001-899888 20010706, US 2003-658091 20030909
FDT US 2004047806 A1 CIP of US 6617458
PRAI **US 2000-216933P 20000708**; US 2001-899888 20010706; US 2003-658091 20030909
IC ICM G01N001-30
ICS C07D213-57; C07D403-02; C07D413-02; C07D417-02; G01N033-48
AB US2004047806 A UPAB: 20040505
NOVELTY - Unsymmetrical methane and polymethine dyes bearing one or two cyano groups in the alpha -carbon relative to the nucleus of the dye compounds, are new.
DETAILED DESCRIPTION - Unsymmetrical methane and polymethine dyes of formula (9) are new.
R = 1-25C, alkyl, alkenyl, aralkyl, hydroxyalkyl, alkoxyalkyl, aryloxyalkyl, aminoalkyl, carboxyalkyl, or arylthioalkyl;
Z = group containing non-metallic atoms necessary to complete heterocyclic or heteropolycyclic ring with the atoms to which it is

attached and may contain oxygen, nitrogen, selenium, or sulfur, up to 25C, and can be substituted with lower alkyl, nitro, halo, carboxyl, sulfonic acid, amino or phosphoric groups;

Y = group containing non-metallic atoms necessary to complete cyclic or polycyclic ring with the atoms to which it is attached and may contain nitrogen, oxygen, selenium, or sulfur and up to 25C and can be substituted with lower alkyl, nitro, halo, carboxylic, sulfonic, hydroxyl, primary amino or secondary amino groups; and

Q = =CH-, =CH-CH=CH-, or =CH-CH=CH-CH=CH- groups.

USE - For the measurement and detection of biological compounds such as bacteria, viruses, enzymes, drugs, blood groups, hormones, environmental contaminants, nucleotides, chemically modified oligo- and polynucleotides, toxins, food, genes, or cells.

ADVANTAGE - The inventive unsymmetrical methane and polymethine dyes have physicochemical properties which can label cells and other biological substrates. They are readily coupled to compounds of clinical interest. They also exhibit distinct fluorescence excitation and emission spectra, corresponding to that of the specific class of chromophores.

Dwg.0/0

FS CPI EPI

FA AB; GI; DCN

MC CPI: B06-H; B07-H; B12-K04E; D05-H04; D05-H06A; D05-H08; D05-H09; E07-D04A; E25-B03

EPI: S03-E09E; S03-E14H

L8 ANSWER 2 OF 2 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN

AN 2003-119559 [11] WPIX

CR 2004-313882 [29]

DNC C2003-030741

TI New alpha-cyano-substituted methine and polymethine dyes, useful for fluorescent labeling of biological substrates, e.g. for detection and analysis.

DC B04 D16 E24

IN THEODOROPULOS, S

PA (THEO-I) THEODOROPULOS S

CYC 1

PI US 2002078857 A1 20020627 (200311)* 8 C09D011-00 <--

US 6617458 B2 20030909 (200361) C09D011-00

ADT US 2002078857 A1 **Provisional US 2000-216933P 20000708**, US 2001-899888 20010706; US 6617458 B2 **Provisional US 2000-216933P 20000708**, US 2001-899888 20010706

PRAI **US 2000-216933P 20000708**; US 2001-899888 20010706

IC ICM C09D011-00

ICS C07D401-02

AB US2002078857 A UPAB: 20040505

NOVELTY - alpha -Cyano-(poly)methine dyes (A).

DETAILED DESCRIPTION - alpha -Cyano-(poly)methine dyes (A) of formulae (I) and (II) are new.

Z = residue that completes a hetero(bi)cyclic ring, containing up to 25 carbon, oxygen, nitrogen or sulfur atoms, optionally substituted by one or more lower alkyl, nitro, halo, carboxy, sulfo or amino;

Q = CH, CH=CH, CH-CH=CH-CH=CH, or the groups (i) - (iii) (no specific points of connection is given in the specification for the groups);

Y = halo, hydroxy, thiol, amino, and optionally substituted alkoxy, aryloxy or arylthio;

R1, R2 = 1-12C alkyl, provided at least one group is substituted by sulfo, sulfato, phosphoric acid, carboxy, halo, thiol, thioether, sulfonyloxyamino, thiocyanato, hydrazino, maleimido, succinate ester, amino, or optionally substituted (hetero)aralkyl;

R3 = hydrogen or cyano;

R4 = hydroxy, thiol, phosphoric acid, primary or secondary amino;

M = up to 25C (hetero)aromatic, optionally including nitrogen,

oxygen or sulfur, and optionally substituted by one or more of lower alkyl, nitro, halo, carboxy, sulfonic or phosphoric acid groups;
X = chloro, bromo, iodo, chlorate, sulfate, acetate or propionate anion.
INDEPENDENT CLAIMS are also included for the following:
(1) method for preparing (A);
(2) conjugate of (A) with a biological substrate; and
(3) method for fluorescent labeling of a biological substrate by treating with (A).
USE - (A) are useful for covalent, fluorescent labeling of biological substrates, e.g. for measurement and detection of biological or clinical compounds or cells.
ADVANTAGE - The cyano group in (A) improves photochemical (and physiochemical) stability and fluorescent efficiency. (A) may include functional groups that allow bonding to a wide variety of substrates.
Dwg.0/0
FS CPI
FA AB; GI; DCN
MC CPI: B04-F01; B06-H; B07-H; B10-A15; B12-K04A; B12-K04E; D05-H08; D05-H09; E24-A05; E25-B03

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FILE 'HOME' ENTERED AT 09:14:06 ON 11 MAR 2005

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=> d his

     (FILE 'HOME' ENTERED AT 09:11:37 ON 11 MAR 2005)

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                E US2000-216933/AP,PRN
L2            2 US2000-216933P/AP,PRN
L3            2 L1-2

     FILE 'REGISTRY' ENTERED AT 09:13:04 ON 11 MAR 2005

     FILE 'HCAPLUS' ENTERED AT 09:13:06 ON 11 MAR 2005
L4              TRA L3 1- RN :       11 TERMS

     FILE 'REGISTRY' ENTERED AT 09:13:07 ON 11 MAR 2005
L5           11 SEA L4

     FILE 'WPIX' ENTERED AT 09:13:07 ON 11 MAR 2005
L6            2 (US20040047806 OR US661748 OR US20020078857)/PN
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L7            2 US2000-216933P/AP,PRN
L8            2 L6-7

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L9              STR
L10           3 L9
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L12          79 E1-79 AND L11

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L13          19 L12

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L14           4 L12
                SEL AN
                EDIT E80-E83 /AN /OREF

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L15           9 E80-83
L16          26 L13 OR L15
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L17          35 E3-4
L18           2 L16 AND L17
L19          24 L16 NOT L18
L20             QUE PY<=2000 OR AY<=2000 OR PRY<=2000 OR PD<20000708 OR AD<2000
L21          23 L19 AND L20

=> b reg
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STRUCTURE FILE UPDATES:    9 MAR 2005  HIGHEST RN 844817-50-1
DICTIONARY FILE UPDATES:   9 MAR 2005  HIGHEST RN 844817-50-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005
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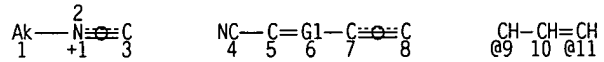
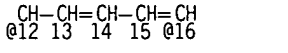
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d que sta l12
L9 STR





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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
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182012-33-5/BI OR 197080-33-4/BI OR 197080-34-5/BI OR 197080-35
-6/BI OR 203445-56-1/BI OR 211060-94-5/BI OR 23226-50-8/BI OR
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7/BI) AND L11

=> b hcap
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FILE COVERS 1907 - 11 Mar 2005 VOL 142 ISS 12
FILE LAST UPDATED: 10 Mar 2005 (20050310/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d all fhitstr l18 tot

L18 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:203350 HCAPLUS
DN 140:219347
ED Entered STN: 14 Mar 2004
TI Unsymmetrical methine and polymethine dye-molecules for fluorescent
intracellular applications
IN **Theodoropulos, Spyros**
PA USA
SO U.S. Pat. Appl. Publ., 8 pp., Cont.-in-part of U.S. Ser. No. 899,888.
CODEN: USXXCO
DT Patent
LA English
IC ICM G01N001-30
ICS G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
NCL 424009600; 546268100; 546270100; 546271700; 546273400; 548121000;
546330000; 435040500
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic
Sensitizers)
Section cross-reference(s): 9, 27
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004047806	A1	20040311	US 2003-658091	20030909
	US 2002078857	A1	20020627	US 2001-899888	20010706
	US 6617458	B2	20030909		
PRAI	US 2000-216933P	P	20000708		
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004047806	ICM	G01N001-30
	ICS	G01N033-48; C07D417-02; C07D043-02; C07D413-02; C07D213-57
	NCL	424009600; 546268100; 546270100; 546271700; 546273400; 548121000; 546330000; 435040500
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00

AB A new class of alpha-cyanomethine and alpha-cyanopolymethine dyes is
provided having moieties which serve for the covalent attachment to biol.
substrates and resulting in the fluorescent labeling of the substrates.
The labeled substrates are useful in anal. techniques for the detection
and measurement of biol. and clin. compds. of interest. Of particular
interest is a class of methine mols. which are nonfluorescent in buffer
solns. but intensely fluoresce when they enter a cell.

Search done by Noble Jarrell

ST unsym methine polymethine dye intracellular fluorescent; cyanomethine polymethine dye prodn fluorescent label biomol

IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)

IT Fluorescent dyes
(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Cyanine dyes
(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT Biochemical molecules
Biological materials
Fluorescent indicators
(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-88-8 438582-89-9
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 438582-86-6P 438582-87-7P **438582-90-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

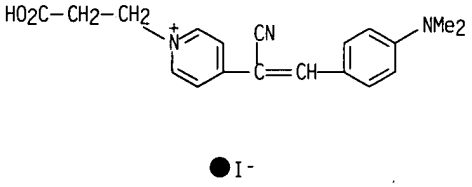
IT 438582-91-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

IT **438582-90-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

RN 438582-90-2 HCAPLUS

CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)



L18 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:487927 HCAPLUS

DN 137:48555

ED Entered STN: 28 Jun 2002

TI .alpha.-Cyanomethine and polymethine dyes for fluorescent labeling of biological substrates

IN **Theodoropulos, Spyros**

PA USA

SO U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09D011-00
NCL 106031450
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 27
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002078857	A1	20020627	US 2001-899888	20010706
	US 6617458	B2	20030909		
	US 2004047806	A1	20040311	US 2003-658091	20030909
PRAI	US 2000-216933P	P	20000708		
	US 2001-899888	A2	20010706		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002078857	ICM	C09D011-00
	NCL	106031450
US 2002078857	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00
US 2004047806	ECLA	C09B023/00B10B; C09B023/02; C09B023/14H; C09B057/00

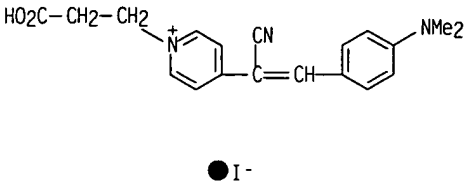
OS MARPAT 137:48555
AB Cyanomethine dyes are provided having moieties which serve for the covalent attachment to biol. substrates and resulting in the fluorescent labeling of the substrates. The labeled substrates are useful in anal. techniques for the detection and measurement of biol. and clin. compds. of interest. In an example, squaric acid was condensed (1:2) with 1-(2-carboxyethyl)-4-(cyanomethyl)pyridinium iodide to give a dye with excitation maximum 627 nm and emission maximum 664 nm at pH 7.8.
ST cyanomethine polymethine dye prodn fluorescent label biomol
IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(IgG; production of cyanomethine and -polymethine dyes for fluorescent labeling of)
IT Fluorescent dyes
(cyanine; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT Cyanine dyes
(fluorescent; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT Fluorescent indicators
(production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 438582-88-8 438582-89-9
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 438582-86-6P 438582-87-7P **438582-90-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 438582-91-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)
IT 100-10-7, 4-(Dimethylamino)benzaldehyde 141-76-4, 3-Iodopropionic acid 1497-49-0 2892-51-5, Squaric acid 13121-99-8, 4-(Cyanomethyl)pyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; production of cyanomethine and -polymethine dyes for

fluorescent labeling of biomols.)

IT **438582-90-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; production of cyanomethine and -polymethine dyes for fluorescent labeling of biomols.)

RN 438582-90-2 HCAPLUS

CN Pyridinium, 1-(2-carboxyethyl)-4-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-, iodide (9CI) (CA INDEX NAME)



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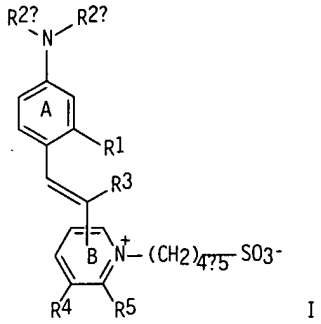
L21 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:79956 HCAPLUS
DN 142:116011
ED Entered STN: 31 Jan 2005
TI Quinolinium- and pyridinium-based fluorescent dye compounds for protein staining
IN Pennington, Mark William; Scopes, David Ian; Orchard, Michael Glen
PA Oxford Glycosciences UK Ltd., UK
SO U.S., 17 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C07D401-10
ICS C07D403-10; C07D215-12; C07D213-36; C07D213-57
NCL 544359000; 544363000; 544124000; 544128000; 546172000; 546330000; 546334000; 546194000; 546276400
CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 28
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6335446	B1	20020101	US 1999-412168	19991005 <--
	CA 2393734	AA	20040116	CA 2002-2393734	20020716 <--
PRAI	GB 1998-21682	A	19981005	<--	
	GB 1998-21683	A	19981005	<--	
	GB 1998-21684	A	19981005	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6335446	ICM	C07D401-10
	ICS	C07D403-10; C07D215-12; C07D213-36; C07D213-57
	NCL	544359000; 544363000; 544124000; 544128000; 546172000; 546330000; 546334000; 546194000; 546276400
US 6335446	ECLA	C07D213/38; C07D213/57; C07D215/12; C09B023/14H <--

GI



I

AB The present invention relates to quinolinium- and pyridinium-based fluorescent dyes of formula I: wherein R1 is C1-C6 straight or branched chain alkyl, halogen or CF3; either R2a and R2b are independently C1-C20 straight or branched chain alkyl, a C1-C20 straight or branched chain aralkyl or H, R2a and R2b not simultaneously being H, or R2a and R2b are taken together and form amorpholinyl, piperidinyl or pyrrolidinyl ring; R3 is H or C1-C6 straight or branched chain alkyl; and either R4 and R5 are both H, or R4 and R5 taken together are -CH:CH-CH:CH-, the aromatic rings A and B, the -(CH2)4-5- group, and the C(H):C(R3)- group being optionally substituted with one or more -OH, C1-C6 straight or branched chain alkoxyl, halogen, C1-C6 straight or branched chain haloalkyl, pyridyl, thiophenyl, furyl, and Ph, the Ph being optionally substituted with one or more -OH, C1-C6 straight or branched chain alkyl or C1-C6 straight or branched chain alkoxyl. The dyes are useful for staining proteins in solution, in gels and on solid supports. The dyes of the invention exhibit higher fluorescence emission than known compds. when bound to proteins and also exhibit improved contrast of fluorescence intensity between their protein-bound and unbound states.

ST quinolinium pyridinium fluorescence dye compd

IT Staining, biological
(fluorescent; production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT Fluorescent dyes
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT Proteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT 90133-80-5P, N,N-Dihexyl-4-aminobenzaldehyde 150558-02-4P, N-Decanoyl-N'-phenylpiperazine 150558-09-1P, N-Octanoyl-N'-phenylpiperazine 823216-22-4P, N,N-Dipentyl-4-bromo-3-chloroaniline 823216-23-5P, N,N-Dipentyl-4-bromo-3-methylaniline 823216-24-6P, N,N-Dipentyl-4-bromo-3-trifluoromethylaniline 823216-26-8P, N-Decyl-4-bromo-3-trifluoromethylaniline 823216-27-9P 823216-28-0P 823216-29-1P 823216-30-4P 823216-31-5P 823216-37-1P 823216-38-2P 823216-39-3P 823216-40-6P 823216-41-7P 823216-42-8P 823216-43-9P 823216-44-0P 823216-51-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT 603-35-0, Triphenylphosphine, uses 1112-67-0, Tetra-N-butylammonium chloride 3375-31-3, Palladium diacetate 6163-58-2, Tri-o-tolylphosphine 7087-68-5, N,N-Diisopropylethylamine 56553-60-7, Sodium triacetoxyborohydride

RL: CAT (Catalyst use); USES (Uses)
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT 823216-32-6P 823216-33-7P 823216-34-8P 823216-35-9P 823216-36-0P 823216-45-1P 823216-46-2P 823216-47-3P 823216-48-4P 823216-49-5P 823216-50-8P **823216-52-0P 823216-53-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

IT 92-54-6, N-Phenylpiperazine 100-43-6, 4-Vinylpyridine 100-69-6, 2-Vinylpyridine 110-53-2, 1-Bromopentane 110-62-3, Valeraldehyde 111-64-8, Octanoyl chloride 112-13-0, Decanoyl chloride 112-31-2, Decanal 128-08-5, N-Bromosuccinimide 393-36-2, 4-Bromo-3-trifluoromethylaniline 1633-83-6, 1,4-Butanesultone 4430-09-5, N,N-Dihexylaniline 4945-29-3, 4-Vinylquinoline 6933-10-4, 4-Bromo-3-methylaniline 21402-26-6, 4-Bromo-3-chloroaniline 90134-10-4, N,N-Dibutyl-4-aminobenzaldehyde 92333-25-0, 4-Acetonitrilepyridine hydrochloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(staring material; production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

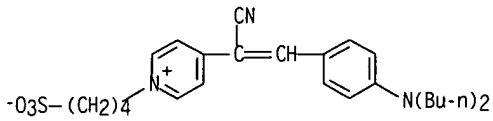
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

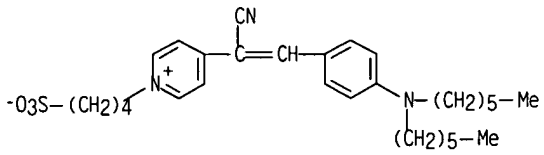
(1) Anon; EP 0548798 1993 HCAPLUS
(2) Anon; WO 9636882 WO 1996 HCAPLUS
(3) Anon; WO 9823950 WO 1998 HCAPLUS
(4) Basili; Dissertation Abstracts, Ph D Thesis, University of Washington 1997, V58(12-B), P6686
(5) Haugland; US 5616502 A 1997 HCAPLUS
(6) Prasad; US 5912257 A 1999 HCAPLUS

IT **823216-52-0P 823216-53-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of quinolinium- and pyridinium-based fluorescent dye compds. for staining of proteins in solution, in gels and on solid supports)

RN 823216-52-0 HCAPLUS
CN Pyridinium, 4-[1-cyano-2-[4-(dibutylamino)phenyl]ethenyl]-1-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)



RN 823216-53-1 HCAPLUS
CN Pyridinium, 4-[1-cyano-2-[4-(dihexylamino)phenyl]ethenyl]-1-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)



L21 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:527389 HCAPLUS

DN 129:167911
ED Entered STN: 21 Aug 1998
TI Nonlinear optical films from pairwise-deposited semi-ionomeric syndioregic polymers
IN Lindsay, Geoffrey A.; Wynne, Kenneth J.; Smith, John D. Stenger; Chafin, Andrew P.; Hollins, Richard A.; Roberts, Marion J.; Zarras, Peter
PA United States Dept. of the Navy, USA
SO PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K019-02
ICS C09K019-48; B05D001-20
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 75
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9832813	A1	19980730	WO 1997-US23990	19971222 <--
W: JP, KP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5882785	A	19990316	US 1997-800943	19970123 <--
PRAI US 1997-800943	A	19970123 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9832813	ICM	C09K019-02
	ICS	C09K019-48; B05D001-20
WO 9832813	ECLA	B05D001/20C; G02F001/361F2; G02F001/361L <--
US 5882785	ECLA	B05D001/20C; G02F001/361F2; G02F001/361L <--

AB Polarized films are described which comprise asym. chromophores linked head-to-head by alternating two different kinds of bridging groups. One of the bridging groups contains one or more ionic groups, and the other bridging group contains one or more non-ionic, hydrophilic groups. The chromophores may be nonlinear optical chromophores. Langmuir-Blodgett (LB) film deposition methods are also described in which a layer of a nonaq. solution of one polymer is spread on a subphase of an aqueous solution of the other in a Langmuir-Blodgett trough, a mol. bilayer of the two polymers is allowed to form by waiting 1-60 min, and the bilayer is then compressed while maintaining a gas-liquid surface pressure of 20-90% of the min. pressure required to collapse the bilayer; a multilayered film may then be formed by repeated dipping of a substrate. An electrooptical film which has never undergone elec.-field poling nor high temperature treatment may be produced. This eliminates the dilution effect of the long hydrophobic alkyl groups, and creates stronger ionic bonds between the polymer chains and reduces the time to make a film of a given thickness by at least half by virtue of depositing two polymer layers per stroke.
ST nonlinear optical Langmuir Blodgett film; syndioregic polymer Langmuir Blodgett film
IT Coating process
(Langmuir-Blodgett; nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)
IT Langmuir-Blodgett films
Langmuir-Blodgett multilayers
Nonlinear optical materials
(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)
IT Optical films
(optical films from pairwise-deposited semiionomeric syndioregic polymers)
IT Polymers, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(syndioregic; nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 211060-90-1P **211060-94-5P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 3216-88-4 211060-89-8 211060-91-2 211060-92-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

IT 211060-93-4P 211060-95-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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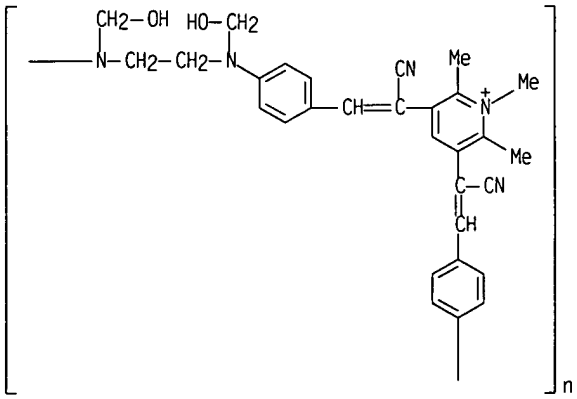
(2) Decher; US 5208111 A 1993
(3) Hall; US 5162453 A 1992 HCAPLUS
(4) Masse; US 5397508 A 1995 HCAPLUS
(5) Penner; US 5245602 A 1993
(6) Stenger-Smith; US 5247055 A 1993 HCAPLUS
(7) Wynne; US 5520968 A 1996 HCAPLUS

IT **211060-94-5P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(nonlinear optical films from pairwise-deposited semiionomeric syndioregic polymers)

RN 211060-94-5 HCAPLUS

CN Poly[[(hydroxymethyl)imino]-1,2-ethanediyl[(hydroxymethyl)imino]-1,4-phenylene(2-cyano-1,2-ethenediyl)(1,2,6-trimethylpyridinium-3,5-diyl)(1-cyano-1,2-ethenediyl)-1,4-phenylene iodide] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

●I-

L21 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

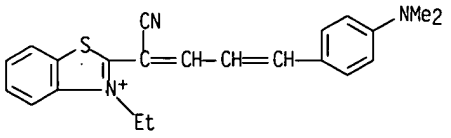
AN 1998:79573 HCAPLUS
DN 128:177903
ED Entered STN: 11 Feb 1998
TI Reagents for determining reductive nicotinamide coenzyme
IN Chousa, Satoshi; Iwasaki, Hitoshi; Ono, Mashashi
PA Iwasaki, Hitoshi, Japan; Kyoto Daiichi Kagaku Co., Ltd
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N033-50
ICS G01N021-78
CC 9-15 (Biochemical Methods)
Section cross-reference(s): 7, 13
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10031018	A2	19980203	JP 1996-184977	19960715 <--
PRAI JP 1996-184977		19960715 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10031018	ICM	G01N033-50
	ICS	G01N021-78

OS MARPAT 128:177903
AB A reagent contains a styryl pigment, and it reacts with reductive nicotinamide coenzyme of test fluids. The discoloration caused by the coenzyme in the presence of electron transporting agent, and the change in light absorption in the visible region are measured and correlated with the activity of the enzyme. For example, a pigment used is 2-[1-cyano-4-(4-dimethylaminophenyl)-1,3-butadienyl]-3-ethylbenzothiazolium iodide, and the electron transporting agent is diaphorase.
ST nicotinamide coenzyme detn styryl pigment spectrophotometry
IT Pigments, nonbiological
(reagents for determining reductive nicotinamide coenzyme)
IT Spectrophotometry
(reagents for determining reductive nicotinamide coenzyme by)
IT **203445-56-1**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as pigment reagents for determining reductive nicotinamide coenzyme)
IT 9001-68-7, Diaphorase 9079-67-8, Diaphorase
RL: AMX (Analytical matrix); ANST (Analytical study)
(pigment reagents for determining reductive nicotinamide coenzyme in presence of)
IT 53-57-6
RL: ANT (Analyte); ANST (Analytical study)
(reagents for determining reductive nicotinamide coenzyme)
IT **203445-56-1**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as pigment reagents for determining reductive nicotinamide coenzyme)
RN 203445-56-1 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-4-[4-(dimethylamino)phenyl]-1,3-butadienyl]-3-ethyl-, iodide (9CI) (CA INDEX NAME)



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L21 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:621787 HCAPLUS
DN 127:292829
ED Entered STN: 29 Sep 1997
TI Heterocycles as donor and acceptor units in push-pull conjugated molecules. Part 1
AU Bradamante, Silvia; Facchetti, Antonio; Pagani, Giorgio A.
CS Dipartimento di Chimica Organica e Industriale dell'Universita di Milano and Centro CNR Speciali Sistemi Organici, Milan, I-20133, Italy
SO Journal of Physical Organic Chemistry (1997), 10(7), 514-524
CODEN: JPOCEE; ISSN: 0894-3230
PB Wiley
DT Journal
LA English
CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 41, 73
AB The synthesis and spectroscopic investigation of a number of push-pull ethenes in which the donor moiety is represented by a .pi.-excessive five-membered heterocycle (pyrrole, indole and thiophene) and the acceptor group is a .pi.-deficient heterocyclic azine ring (pyridine, pyrazine, pyrimidine, pyridazine) are described. The intramol. charge transfer in both the neutral compds. and the corresponding N-alkylpyridinium triflates is discussed and confirmed on the basis of three different descriptors, .DELTA..lambda.HetPh, .DELTA..lambda.+n, and .DELTA..lambda.solv2solv1, that take into account the substitution of a Ph with a heterocyclic donor ring, charge effects and solvatochromism, resp. According to the .DELTA..lambda.HetPh descriptor, the intramol. charge transfer in the described diheteroarylethenes increases upon increasing the electron-withdrawing capacity of the acceptor, sustained by the presence of either more than one nitrogen atom or the pos. charge in the heterocyclic azine. The described pyridinium derivs. belong to the rarely investigated class of dimethine cyanine dyes. The response of the 13C and 15N NMR chemical shift data appears to be less clear because of the low sensitivity of the NMR probes to remote substitution.
ST UV heterocyclic push pull conjugated ethene; intramol charge transfer diheteroarylethene; dimethine cyanine dye UV; solvatochromism heterocyclic push pull conjugated ethene; donor acceptor ethene heterocyclic UV
IT Cyanine dyes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(dimethine; heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT Electron acceptors
Electron donors
Solvatochromism
UV and visible spectra
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT Heterocyclic compounds
Pyridinium compounds
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)

IT Electron transfer
(intramol.; heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT NMR (nuclear magnetic resonance)
(13C and 15N; heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT 1834-86-2P 23260-04-0P 197080-20-9P 197080-25-4P 197080-30-1P 197080-31-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT 194220-89-8P 197080-21-0P 197080-22-1P 197080-23-2P 197080-27-6P 197080-29-8P 197080-32-3P **197080-34-5P** 197080-36-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT 108-89-4, 4-Picoline 109-06-8, 2-Picoline 109-08-0, Methylpyrazine 333-27-7, Methyl triflate 872-85-5, 4-Pyridinecarboxaldehyde 1192-58-1, N-Methylpyrrole-2-carboxaldehyde 1632-76-4, 3-Methylpyridazine 2026-42-8, Diethyl 2-thienylmethylphosphonate 2739-97-1, 2-Pyridylacetonitrile 3438-46-8, 4-Methylpyrimidine 13121-99-8, 4-Pyridylacetonitrile 19012-03-4, N-Methylindole-3-carboxaldehyde 66143-72-4, Cetyl triflate
RL: RCT (Reactant); RACT (Reactant or reagent)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
IT 197080-38-9P 197080-40-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)
RE.CNT 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(55) Schiemenz, G; Liebigs Ann Chem 1981, P1476 HCAPLUS
(56) Srinivasan, C; Indian J Chem 1991, V30B, P966 HCAPLUS
(57) Witanowski, M; Ann Rep NMR Spectrosc 1986, V18, P495
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(59) Zotti, G; Makromol Chem 1990, V36, P337 HCAPLUS
(60) Zotti, G; Synth Met 1991, V40, P299 HCAPLUS

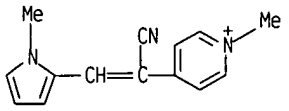
IT **197080-34-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(heterocycles as donor and acceptor units in push-pull conjugated ethenes)

RN 197080-34-5 HCAPLUS

CN Pyridinium, 4-[1-cyano-2-(1-methyl-1H-pyrrol-2-yl)ethenyl]-1-methyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

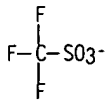
CM 1

CRN 197080-33-4
CMF C14 H14 N3



CM 2

CRN 37181-39-8
CMF C F3 O3 S



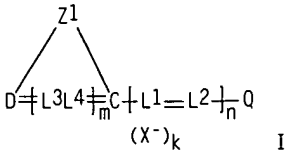
L21 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:616096 HCAPLUS
DN 125:261111
ED Entered STN: 17 Oct 1996
TI Silver halide photographic material and rapid development process
IN Honda, Mari; Oonishi, Akira; Tanaka, Tatsuo; Komamura, Tawara
PA Konishiroku Photo Ind., Japan; Konica Minolta Holdings Inc.
SO Jpn. Kokai Tokkyo Koho, 41 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03C001-83
ICS G03C001-06; G03C005-26
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08179467	A2	19960712	JP 1994-323063	19941226 <--
	JP 3467658	B2	20031117		
PRAI	JP 1994-323063		19941226 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 08179467	ICM	G03C001-83
	ICS	G03C001-06; G03C005-26

GI



I

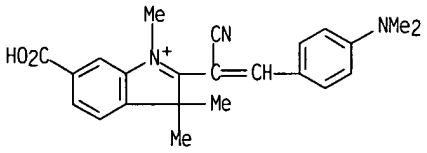
AB The Ag halide photog. material has .gtoreq.1 nonphotosensitive hydrophilic colloidal layer on a support containing a dispersion of solid dye microparticle whose chemical formula is represented by I (D = N, N+R1; R1 = H, alkyl, alkenyl, O+, S+; Z1 = nonmetallic atomic group forming heterocyclyl; Q = aryl, heterocyclyl; X- = anion; k = 0, 1; m = 0, 1; n = 1-3; L1-4 = methine). The process is carried out in the total processing time of .ltoreq.90 s. The photog. material showed little fogging and exhibited image sharpness.
ST silver halide photog material rapid processing
IT Photographic development
Photographic emulsions
(silver halide photog. material and rapid development)
IT 182011-70-7 **182011-72-9** 182011-75-2 182011-79-6
182011-83-2 182011-86-5 182011-89-8 182011-92-3 182011-94-5
182011-95-6 **182011-96-7** 182011-98-9 182012-00-6
182012-01-7 182012-02-8 **182012-03-9** 182012-05-1
182012-07-3 182012-08-4 182012-12-0 182012-14-2 182012-17-5
182012-21-1 182012-25-5 182012-27-7 **182012-30-2**

182012-33-5 182012-36-8 182012-39-1 182012-42-6
182012-45-9 182012-48-2 182012-52-8 182012-53-9 182012-54-0
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dispersion of dye particles in silver halide photog. material)

IT **182011-93-4**
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(dispersion of dye particles in silver halide photog. material)

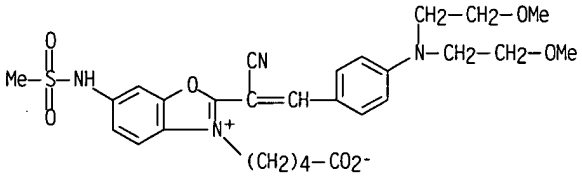
IT **182011-72-9 182011-96-7 182012-03-9**
182012-30-2 182012-33-5
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(dispersion of dye particles in silver halide photog. material)

RN 182011-72-9 HCAPLUS
CN 3H-Indolium, 6-carboxy-2-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)

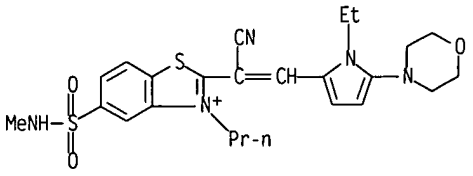


●I-

RN 182011-96-7 HCAPLUS
CN Benzoxazolium, 2-[2-[4-[bis(2-methoxyethyl)amino]phenyl]-1-cyanoethenyl]-3-(4-carboxybutyl)-6-[(methylsulfonyl)amino]-, inner salt (9CI) (CA INDEX NAME)



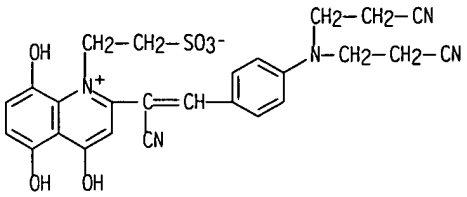
RN 182012-03-9 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-[1-ethyl-5-(4-morpholinyl)-1H-pyrrol-2-yl]ethenyl]-5-[(methylamino)sulfonyl]-3-propyl-, iodide (9CI) (CA INDEX NAME)



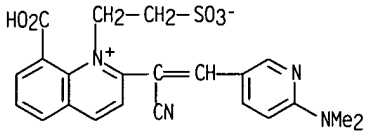
●I-

RN 182012-30-2 HCAPLUS

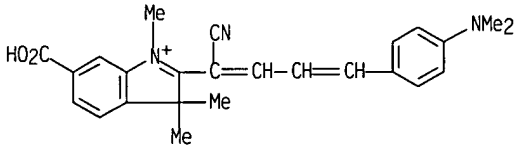
CN Quinolinium, 2-[2-[4-[bis(2-cyanoethyl)amino]phenyl]-1-cyanoethenyl]-4,5,8-trihydroxy-1-(2-sulfoethyl)-, inner salt (9CI) (CA INDEX NAME)



RN 182012-33-5 HCAPLUS
CN Quinolinium, 8-carboxy-2-[1-cyano-2-[6-(dimethylamino)-3-pyridinyl]ethenyl]-1-(2-sulfoethyl)-, inner salt (9CI) (CA INDEX NAME)



IT **182011-93-4**
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(dispersion of dye particles in silver halide photog. material)
RN 182011-93-4 HCAPLUS
CN 3H-Indolium, 6-carboxy-2-[1-cyano-4-[4-(dimethylamino)phenyl]-1,3-butadienyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)



●I-

L21 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1995:300246 HCAPLUS
DN 122:216578
ED Entered STN: 19 Jan 1995
TI Cationic dyes with improved water solubility
IN Yamazaki, Mitsumasa
PA Hodogaya Chemical Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09B023-00
CC 41-5 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 43
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 06287458 A2 19941011 JP 1993-93938 19930330 <--
JP 3167825 B2 20010521
PRAI JP 1993-93938 19930330 <--
CLASS

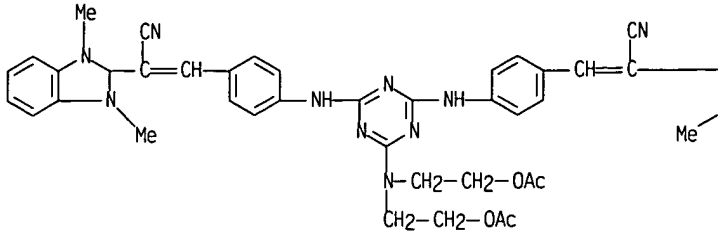
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 06287458	ICM	C09B023-00
JP 06287458	ECLA	C09B023/14B <--

OS MARPAT 122:216578
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

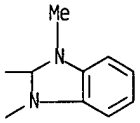
AB The title dyes I [A = quaternized active methylene group-containing compound residue; X = H, Me, CN; B = (substituted) benzene ring; Y- = anion; m + n = 2; m = 0, 1] are useful for dyeing natural and synthetic materials, e.g., paper, pulps, acrylic fibers. Thus, N-methylpicolinium methylsulfate was reacted with 4-H2NC6H4CHO to give II, which was reacted with cyanuric chloride in water in the presence of Na2CO3, then treated with diethanolamine to give III having .lambda.max 421 nm.
ST triazine cationic dye water sol; acetylated hydroxylamine triazine cationic dye; pulp dyeing triazine cationic dye
IT Pulp, cellulose
(bleached; cationic dyes with improved water solubility)
IT Acrylic fibers, miscellaneous
RL: MSC (Miscellaneous)
(cationic dyes with improved water solubility)
IT Dyes
(cationic, cationic dyes with improved water solubility)
IT 161882-52-6P 161882-53-7P 161882-54-8P 161882-55-9P 161882-56-0P 161882-57-1P **161882-58-2P** 161882-59-3P 161882-60-6P 161882-62-8P 161882-63-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cationic dyes with improved water solubility)
IT 123038-30-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of cationic dyes with improved water solubility)
IT 108-77-0, Cyanuric chloride 118-12-7, 1,3,3-Trimethyl-2-methyleneindoline 556-18-3, 4-Aminobenzaldehyde 24866-73-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cationic dyes with improved water solubility)
IT **161882-58-2P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cationic dyes with improved water solubility)
RN 161882-58-2 HCAPLUS
CN 1H-Benzimidazolium, 2,2'-[[6-[bis[2-(acetyloxy)ethyl]amino]-1,3,5-triazine-2,4-diyl]bis[imino-4,1-phenylene(1-cyano-2,1-ethenediyl)]]bis[1,3-dimethyl-, dichloride (9CI) (CA INDEX NAME)

PAGE 1-A



●2 Cl⁻

PAGE 1-B



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L21 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:214875 HCAPLUS
DN 118:214875
ED Entered STN: 29 May 1993
TI Styryl dyes containing an aza-15-crown-5 macroheterocycle moiety
AU Mateeva, N.; Deligeorgiev, T.; Mitewa, M.; Simova, S.
CS Fac. Chem., Univ. Sofia, Sofia, 1126, Bulg.
SO Dyes and Pigments (**1993**), Volume Date 1992, 20(4), 271-8
CODEN: DYPIDX; ISSN: 0143-7208
DT Journal
LA English
CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
AB Seven styryl dyes containing an aza-15-crown-5 moiety were synthesized and characterized by means of elemental anal., m.p., and UV, IR, and 1H-NMR spectra. The color change in the presence of metal salts was investigated.
ST styryl dye crown ether; chromoionophore styryl crown ether
IT Dyes, cyanine
(styryl aza crown ethers, preparation of, as chromoionophores)
IT Ionophores
(chromo-, styryl dye aza crown ethers, preparation of)
IT Crown compounds
RL: SPN (Synthetic preparation); PREP (Preparation)
(ether imines, styryl dyes, preparation of, as chromoionophores)
IT 489-84-9, Guaiazulene
RL: RCT (Reactant); RACT (Reactant or reagent)
(Vilsmeier reaction of, with formylphenylaza crown ether)
IT 66749-96-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(Vilsmeier reaction of, with guaiazulene)
IT 144753-85-5P 146963-86-2P **146963-88-4P** 146963-90-8P
146963-92-0P 147370-29-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as chromoionophore)
IT 333-20-0, Potassium thiocyanate 540-72-7, Sodium thiocyanate
2092-17-3, Barium thiocyanate 7790-69-4, Lithium nitrate 10124-37-5,

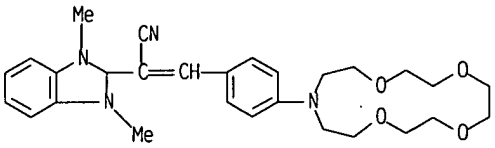
Calcium nitrate 10377-60-3, Magnesium nitrate
RL: USES (Uses)
(styryl dye aza crown ether absorption spectra in acetonitrile solns. of)

IT **146963-88-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as chromoionophore)

RN 146963-88-4 HCAPLUS
CN 1H-Benzimidazolium, 2-[1-cyano-2-[4-(1,4,7,10-tetraoxa-13-azacyclopentadec-13-yl)phenyl]ethenyl]-1,3-dimethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

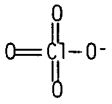
CRN 146963-87-3
CMF C28 H35 N4 O4



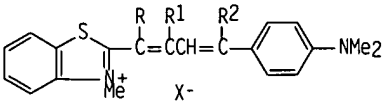
ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

CM 2

CRN 14797-73-0
CMF Cl O4



L21 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1977:56725 HCAPLUS
DN 86:56725
ED Entered STN: 12 May 1984
TI Vinylene homologs of styryl dyes with substituents in the polymethine chain
AU Koval'chuk, R. E.; Il'chenko, A. Ya.
CS Inst. Org. Khim., Kiev, USSR
SO Ukrainskii Khimicheskii Zhurnal (Russian Edition) (**1976**), 42(11), 1174-8
CODEN: UKZHAU; ISSN: 0041-6045
DT Journal
LA Russian
CC 40-7 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
Section cross-reference(s): 28
GI



I

AB The absorption maximum of 10 title compds. (I; R = H, F, CN, COCF3; R1 = H, Cl; R2 = H, Cl, NMe2) were determined and the substituent effects discussed. The .lambda.max in MeNO2 ranged from 478 nm for I (R = CN, R1 = H, R2 = NMe2) [61503-17-1] to 660 nm for I (R = CN, R1 = H, R2 = Cl) [61503-15-9]. All the I showed neg. solvatochromism, the .lambda.max of I (R-R2 = H) [61503-13-7] being 572 nm in MeNO2 and 612 nm in CHCl3. I (R1 = H) were prepared by condensation of 2-RCH2-substituted 3-methylbenzothiazolium salts with p-Me2NC6H4CR2:CHCHO.

ST vinylene homolog styryl dye; substituent effect cyanine spectra; solvatochromism styryl dye homolog; benzothiazole deriv electronic spectra

IT Dyes, cyanine
([[(dimethylamino)phenyl]butadienyl]methylbenzothiazolium compds, preparation and optical absorption of)

IT Solvatochromism
(of [[(dimethylamino)phenyl]butadienyl]methylbenzothiazolium compds.)

IT Molecular structure-property relationship
(spectra, visible, of [[(dimethylamino)phenyl]butadienyl]methylbenzothiazolium compds.)

IT 36874-53-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(chlorination of)

IT 7089-35-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of)

IT 61502-92-9P **61502-94-1P** 61502-96-3P 61502-98-5P 61503-00-2P 61503-02-4P 61503-04-6P 61503-13-7P 61503-15-9P 61503-17-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical absorption of)

IT 61503-10-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and quaternization of)

IT 61503-12-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with (dimethylamino)benzaldehyde)

IT 61503-07-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction with benzothiazolium salts)

IT 61503-08-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 100-10-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (chloropropenyl)methylbenzothiazolium Me sulfate)

IT 57716-36-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (dimethylamino)cinnamaldehyde)

IT 6203-18-5 61503-06-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with benzothiazolium salts)

IT 2038-15-5 57716-32-2 61503-05-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cinnamaldehyde derivs.)

IT 61503-09-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with sodium methoxide)

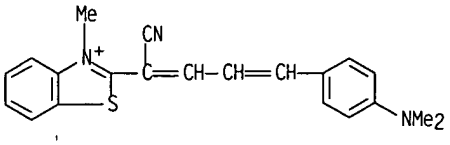
IT **61502-94-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical absorption of)

RN 61502-94-1 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-4-[4-(dimethylamino)phenyl]-1,3-butadienyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

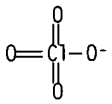
CM 1

CRN 61502-93-0
CMF C21 H20 N3 S



CM 2

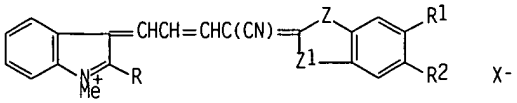
CRN 14797-73-0
CMF Cl O4

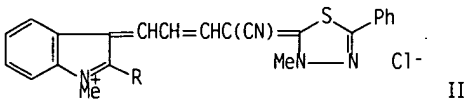


L21 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1976:569617 HCAPLUS
DN 85:169617
ED Entered STN: 12 May 1984
TI Direct-positive silver halide emulsions
AU Anon.
CS UK
SO Research Disclosure (**1976**), 144, 32-5 (No. 14438)
CODEN: RSDSBB; ISSN: 0374-4353
DT Journal; Patent
LA English
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 144038		19760410		

PRAI RD 1976-144038 **19760410**
GI





II

AB Indole dyes I (R = Ph, p-ClC6H4; R1 = H, Cl; R2 = H, Cl; Z = S, NMe, NEt; Z1 = NMe, NEt, CMe2; X- = Cl-, I-, ClO4-) and II (R = Ph, p-ClC6H4) are described, which are particularly suitable for spectrally sensitizing direct-pos. Ag halide emulsions containing fogged Ag halide grains to the red

region of the spectrum. Thus, I (R = p-ClC6H4; R1,R2 = H; Z = S; Z1 = NMe), which was prepared by refluxing 1-methyl-2-(4-chlorophenyl)-3-(2-formylvinyl)indole and 2-cyanomethylene-3-methyl-2,3-dihydrobenzothiazole, 85 mg was added along with Pinakryptol Yellow (III) 87.5 mg to a reduction- and Au-fogged, monodispersed, cubic direct-pos. photog. Ag(Br,I) emulsion (2.5 mole % I-), the emulsion coated on a subbed support, dried, and exposed to give a relative speed of 3200 and a sensitivity maximum at 670-80 nm vs. a relative speed of 100 for a control containing only III.

ST indole dye photog spectral sensitizer; emulsiono direct pos photog sensitization

IT Photographic sensitizers
(indole dyes as, for direct-pos. emulsions)

IT **60834-89-1 60834-90-4 60834-91-5**
60834-93-7 60834-94-8 60834-95-9 **60871-55-8**
61037-85-2
RL: TEM (Technical or engineered material use); USES (Uses)
(photog. spectral sensitizer, for direct-pos. emulsions)

IT 60834-96-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cyanomethylenemethyldihydrobenzothiazole)

IT 60834-97-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with heterocyclic compds.)

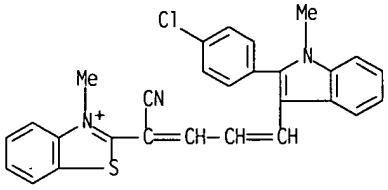
IT 52735-84-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methyl(chlorophenyl)-(formylvinyl)indole)

IT 5114-82-9 60834-98-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methylphenyl(formylvinyl)indole)

IT **60834-89-1 60834-90-4 60834-91-5**
60834-93-7 60871-55-8 61037-85-2
RL: TEM (Technical or engineered material use); USES (Uses)
(photog. spectral sensitizer, for direct-pos. emulsions)

RN 60834-89-1 HCAPLUS

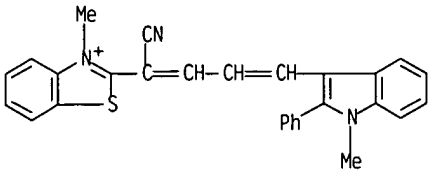
CN Benzothiazolium, 2-[4-[2-(4-chlorophenyl)-1-methyl-1H-indol-3-yl]-1-cyano-1,3-butadienyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



●Cl-

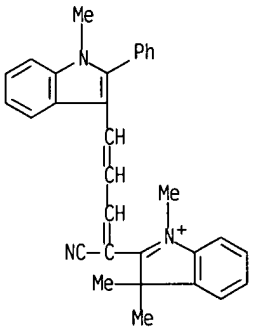
RN 60834-90-4 HCAPLUS

CN Benzothiazolium, 2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



●Cl-

RN 60834-91-5 HCAPLUS
CN 3H-Indolium, 2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-1,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)

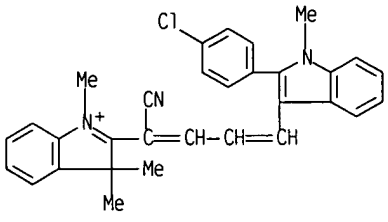


●I-

RN 60834-93-7 HCAPLUS
CN 3H-Indolium, 2-[4-[2-(4-chlorophenyl)-1-methyl-1H-indol-3-yl]-1-cyano-1,3-butadienyl]-1,3,3-trimethyl-, perchlorate (9CI) (CA INDEX NAME)

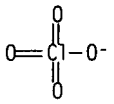
CM 1

CRN 60834-92-6
CMF C31 H27 Cl N3

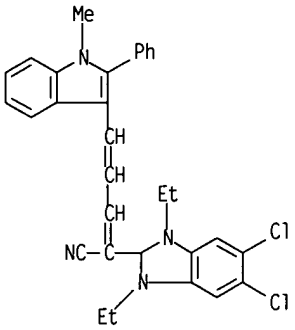


CM 2

CRN 14797-73-0
CMF Cl O4

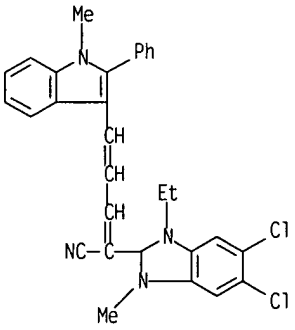


RN 60871-55-8 HCAPLUS
CN 1H-Benzimidazolium, 5,6-dichloro-2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-1,3-diethyl-, iodide (9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

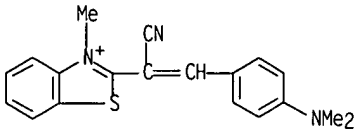
RN 61037-85-2 HCAPLUS
CN 1H-Benzimidazolium, 5,6-dichloro-2-[1-cyano-4-(1-methyl-2-phenyl-1H-indol-3-yl)-1,3-butadienyl]-3-ethyl-1-methyl-, iodide (9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L21 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1976:19153 HCAPLUS
DN 84:19153
ED Entered STN: 12 May 1984
TI Fluorine-containing cyanine dyes. XXXV. Effect on the absorption spectrum of dyes-styryls of substituents in the polymethine chain
AU Il'chenko, A. Ya.; Koval'chuk, R. E.; Yagupol'skii, L. M.
CS Inst. Org. Khim., Kiev, USSR

SO Zhurnal Organicheskoi Khimii (**1975**), 11(10), 2163-7
CODEN: ZORKAE; ISSN: 0514-7492
DT Journal
LA Russian
CC 40-2 (Dyes, Fluorescent Whitening Agents, and Photosensitizers)
GI For diagram(s), see printed CA Issue.
AB The net shift in the .lambda.max of I (R = H, CN, CF3, COCF3; R1 = H, CF3; X = Cl, ClO4-) due to R shows contributions from both the meso-substituent effect as in carbocyanines and its effect on the electron-donating capacity of the benzothiazole nucleus. Both electron-donating and electron-withdrawing R cause a hypsochromic shift from the maximum of I (R = R1 = H). Introduction of CF3 as R1 causes a slight net bathochromic shift. I (R1 = H) were prepared by condensation of the appropriate 2-(RCH2)-substituted benzothiazolium salts with 4-Me2NC6H4CHO [100-10-7] in Ac2O or without solvent under vacuum.
ST fluorine contg styryl dye; substituent effect styryl spectra; benzothiazolium salt styryl spectra; aminostyrylbenzothiazolium salt spectra
IT Dyes
([(dimethylamino)styryl]methylbenzothiazolium salts, substituent effects on visible spectra of)
IT Ultraviolet and visible spectra
(of [(dimethylamino)styryl]methylbenzothiazolium salts, substituent effects on)
IT 42905-57-7P 57716-27-5P 57716-30-0P **57716-31-1P**
57716-34-4P 57716-37-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of)
IT 84-83-3 122-51-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethyl)methylbenzothiazolium chloride)
IT 57716-28-6 57716-32-2 57716-36-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (dimethylamino)benzaldehyde)
IT 2038-15-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (dimethylamino)trifluoroacetophenone)
IT 100-10-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with benzothiazolium salts)
IT 2396-05-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dimethylbenzothiazolium Me sulfate)
IT **57716-31-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and absorption spectra of)
RN 57716-31-1 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-[4-(dimethylamino)phenyl]ethenyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



●Cl-

L21 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1974:431848 HCAPLUS

DN 81:31848
ED Entered STN: 12 May 1984
TI Sensitized electrophotographic layers
IN Oehlschlaeger, Hans; Riester, Oskar; Ghys, Theofiel H.; Verhille, Karel E.; Vanheertum, Johannes J.
PA Agfa-Gevaert A.-G.
SO Ger. Offen., 22 pp.
CODEN: GWXXBX
DT Patent
LA German
IC G03G
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2214055	A1	19730927	DE 1972-2214055	19720323 <--
	BE 796792	A2	19730917	BE 1973-1004896	19730315 <--
	US 3881926	A	19750506	US 1973-342872	19730319 <--
	GB 1401133	A	19750723	GB 1973-13277	19730320 <--
	CA 984651	A1	19760302	CA 1973-166696	19730321 <--
	IT 979930	A	19740930	IT 1973-48929	19730322 <--
	CH 582368	A	19761130	CH 1973-4191	19730322 <--
	FR 2177095	A1	19731102	FR 1973-10544	19730323 <--
	JP 49008237	A2	19740124	JP 1973-32818	19730323 <--
PRAI	DE 1972-2214055	A	19720323 <--		

CLASS

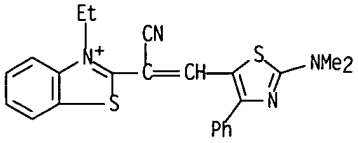
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2214055	IC	G03G

GI For diagram(s), see printed CA Issue.
AB Cyanine dyes (I, II, III; R = NO2, acyl; R1, R2 = aryl, saturated or unsatd. aliphatic; R3 = H, aryl, saturated or unsatd. aliphatic; R4 = SR7, NR8R9 where R7,R8,R9 = aliphatic or R8R9 together completing a 5- or 6-member heterocyclic ring; n, p = 0, 1; M = 0-3 interger; X- = anion; Z1, Z2 = atom groups for completing a 5- or 6-member heterocyclic ring.) are used as spectral sensitizers for zinc oxide and organic photoconductors in electrophotog. Thus, 0.1 g IV as 0.1% solution in DMF was added to a photoconductive composition prepared from ZnO 20, acrylic copolymer 4.5 g, PhMe 20, EtOAc 11 and 10% tetrachlorophthalic anhydride in EtOH 0.66 ml., coated on a baryta paper (25 g ZnO/m2), charged, exposed to an incandescent lamp (2280 lx) through a stepwedge for 15 sec to give 25 steps with a maximum sensitivity at 555 nm, as compared to only 14 steps for IV-free control.
ST cyanine sensitizer electrophotog
IT Photographic sensitizers
(electro-, cyanine dyes as)
IT 42905-55-5 42905-56-6 42905-57-7 42905-58-8 42905-61-3
42905-69-1 **42905-72-6** **42905-84-0** 42905-86-2
42905-95-3 43138-17-6 53035-24-8 53035-26-0 53035-28-2
53035-30-6 **53035-32-8** 53035-34-0 53035-36-2
53035-38-4 **53092-12-9** **53092-14-1** 53100-80-4
RL: USES (Uses)
(electrophotog. sensitizer)
IT **42905-72-6** **42905-84-0** **53035-30-6**
53035-32-8 **53092-12-9** **53092-14-1**
RL: USES (Uses)
(electrophotog. sensitizer)
RN 42905-72-6 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

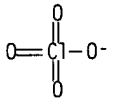
CRN 48221-76-7

CMF C23 H21 N4 S2



CM 2

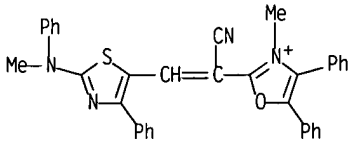
CRN 14797-73-0
CMF Cl O4



RN 42905-84-0 HCAPLUS
CN Oxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-4,5-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

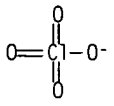
CM 1

CRN 48237-95-2
CMF C35 H27 N4 O S



CM 2

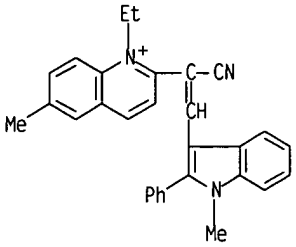
CRN 14797-73-0
CMF Cl O4



RN 53035-30-6 HCAPLUS
CN Quinolinium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-1-ethyl-6-methyl-, perchlorate (9CI) (CA INDEX NAME)

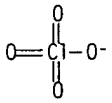
CM 1

CRN 53035-29-3
CMF C30 H26 N3



CM 2

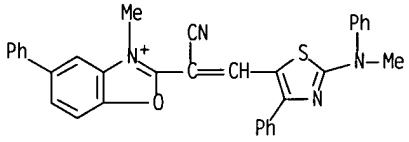
CRN 14797-73-0
CMF Cl O4



RN 53035-32-8 HCAPLUS
CN Benzoxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-5-phenyl-, perchlorate (9CI) (CA INDEX NAME)

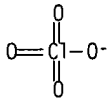
CM 1

CRN 53035-31-7
CMF C33 H25 N4 O S



CM 2

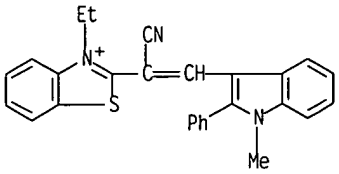
CRN 14797-73-0
CMF Cl O4



RN 53092-12-9 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

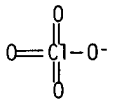
CM 1

CRN 53092-11-8
CMF C27 H22 N3 S



CM 2

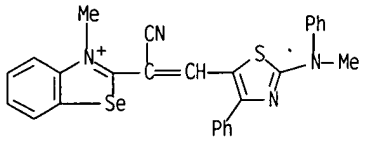
CRN 14797-73-0
CMF Cl O4



RN 53092-14-1 HCAPLUS
CN Benzoselenazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

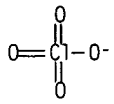
CM 1

CRN 53092-13-0
CMF C27 H21 N4 S Se



CM 2

CRN 14797-73-0
CMF Cl O4



L21 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:499215 HCAPLUS
DN 79:99215
ED Entered STN: 12 May 1984
TI Positive colored images by bleach process
IN Riester, Oskar; Oehlschlaeger, Hans
PA Agfa-Gevaert A.-G.
SO Ger. Offen., 23 pp.
CODEN: GWXXBX
DT Patent
LA German
IC G03C

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2165915	A1	19730712	DE 1971-2165915	19711231 <--
	BE 792436	A2	19730608	BE 1972-1004649	19721208 <--
	GB 1370060	A	19741009	GB 1972-59982	19721229 <--
PRAI	DE 1971-2165915	A	19711231 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2165915	IC	G03C

GI For diagram(s), see printed CA Issue.

AB Pos. colored images were obtained by an Ag-free photobleaching process with copying materials containing NaBPh4 and a cationic methine dye, e.g. I or II. Thus, a paper support was coated with 100 ml of aqueous composition containing 0.05 g I in 5 ml MeOH, 20 ml 10% aqueous gelatin, 0.5 g NaBPh4 in 10 ml H2O and 39 ml 10% aqueous gelatin, 10 ml 10% methanolic poly(vinylpyrrolidinone), and 1.5 ml 7.5% aqueous saponin and dried. The paper was irradiated 2 min at 10 cm with a 500-W lamp to give an orange pos. image on a white background.

ST color photog photobleaching process; boranate color photog photobleaching; phenylboranate color photog photobleaching; methine dye color photog

IT Photographic emulsions
(silver-free, for bleach process containing methine dyes and sodium tetraphenylborate)

IT 143-66-8
RL: USES (Uses)
(color silver-free photog. materials containing methine dyes and)

IT 42905-69-1 **50379-06-1** 50722-78-6
RL: USES (Uses)
(color silver-free photog. materials containing sodium tetraphenylborate and)

IT 42905-91-9P **50379-09-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 50379-10-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (anilidovinyl)dimethyloxopyrimidinium perchlorate)

IT 1757-72-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylbenzoselenazole)

IT 50379-13-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylphenylbenzoxazole)

IT 32623-27-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (cyanomethylene)methylthiazoline)

IT 50379-11-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with (methylphenylamino)phenylthiazolecarboxaldehyde)

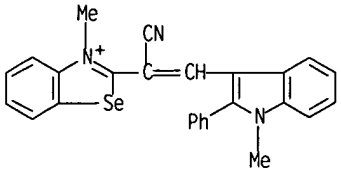
IT 50379-12-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with formylmethylphenylindole)

IT **50379-06-1**
RL: USES (Uses)
(color silver-free photog. materials containing sodium tetraphenylborate and)

RN 50379-06-1 HCAPLUS
CN Benzoselenazolium, 2-[1-cyano-2-(1-methyl-2-phenyl-1H-indol-3-yl)ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

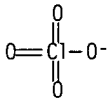
CM 1

CRN 50575-34-3
CMF C26 H20 N3 Se



CM 2

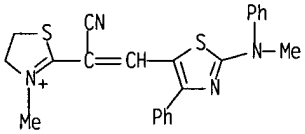
CRN 14797-73-0
CMF Cl O4



IT **50379-09-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 50379-09-4 HCAPLUS
CN Thiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-4,5-dihydro-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

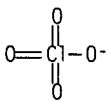
CM 1

CRN 50575-27-4
CMF C23 H21 N4 S2



CM 2

CRN 14797-73-0
CMF Cl O4



L21 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:425684 HCAPLUS
DN 79:25684
ED Entered STN: 12 May 1984

TI Polymethine sensitizers for direct-positive emulsions
IN Riester, Oskar; Oehlschlaeger, Hans; Odenwaelder, Heinrich
PA Agfa-Gevaert A.-G.
SO Ger. Offen., 28 pp.
CODEN: GWXXBX
DT Patent
LA German
IC G03C
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2142967	A1	19730308	DE 1971-2142967	19710827 <--
	BE 787442	A2	19730212	BE 1972-1004289	19720811 <--
	US 3846137	A	19741105	US 1972-282968	19720823 <--
	GB 1392127	A	19750430	GB 1972-39408	19720824 <--
	FR 2150884	A1	19730413	FR 1972-30441	19720825 <--
	CH 566572	A	19750915	CH 1972-12610	19720825 <--
	CA 995052	A1	19760817	CA 1972-150158	19720825 <--
	JP 48032528	A2	19730428	JP 1972-85464	19720828 <--
PRAI	DE 1971-2142967	A	19710827 <--		

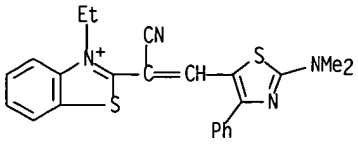
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2142967	IC	G03C

GI For diagram(s), see printed CA Issue.
AB Previously described polymethine dyes from heterocyclic base constituents of cyanine dyes with a CN, NO2, or acyl group at a lateral CH group of the polymethine chain, 20-70 mg/kg, are particularly suitable for direct pos. emulsions because their sensitizing curve is steep and they leave little strain. The sensitizing maxs. of 51 examples vary between 515 and 655 nm. Thus, 2-(cyanomethylene)-3-ethylbenzothiazole 1.0 g and 4-(acetanilidovinyl)-1,3-dimethyl-2-pyrimidone perchlorate 1.7 g were refluxed in Ac20 10 ml for 10 min to yield I, a typical dye with a sensitizing maximum at 580 nm.
ST direct pos photog sensitizer; methine dye sensitizer photog
IT Photographic sensitizers
(polymethine dyes containing cyano and nitro groups as, for direct-pos. emulsions)
IT 21648-40-8 42905-55-5 42905-56-6 42905-57-7 42905-58-8
42905-59-9 42905-60-2 42905-61-3 42905-62-4 42905-63-5
42905-64-6 42905-65-7 42905-66-8 42905-67-9 42905-68-0
42905-69-1 42905-70-4 42905-71-5 **42905-72-6** 42905-73-7
42905-74-8 42905-75-9 42905-76-0 **42905-77-1** 42905-78-2
42905-79-3 **42905-80-6** 42905-81-7 **42905-82-8**
42905-83-9 **42905-84-0** 42905-85-1 42905-86-2
42905-87-3 42905-88-4 42905-89-5 42905-90-8 42905-91-9
42905-92-0 42905-93-1 42905-94-2 42905-95-3 42905-96-4
42905-97-5 42905-98-6 42905-99-7 42906-00-3 43004-13-3
43138-17-6 49715-94-8 50795-72-7
RL: TEM (Technical or engineered material use); USES (Uses)
(photog. sensitizer, for direct-pos. emulsions)
IT **42905-72-6** **42905-77-1** **42905-80-6**
42905-82-8 **42905-83-9** **42905-84-0**
RL: TEM (Technical or engineered material use); USES (Uses)
(photog. sensitizer, for direct-pos. emulsions)
RN 42905-72-6 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

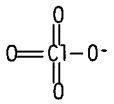
CM 1

CRN 48221-76-7
CMF C23 H21 N4 S2



CM 2

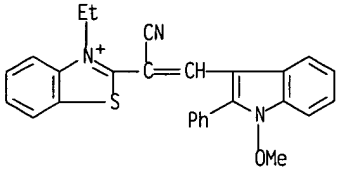
CRN 14797-73-0
CMF Cl O4



RN 42905-77-1 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-(1-methoxy-2-phenyl-1H-indol-3-yl)ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

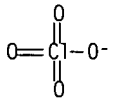
CM 1

CRN 48227-17-4
CMF C27 H22 N3 O S



CM 2

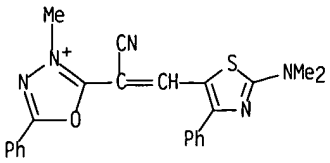
CRN 14797-73-0
CMF Cl O4



RN 42905-80-6 HCAPLUS
CN 1,3,4-Oxadiazolium, 2-[1-cyano-2-[2-(dimethylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-5-phenyl-, perchlorate (9CI) (CA INDEX NAME)

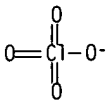
CM 1

CRN 48224-20-0
CMF C23 H20 N5 O S



CM 2

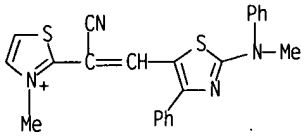
CRN 14797-73-0
CMF Cl O4



RN 42905-82-8 HCAPLUS
CN Thiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-, perchlorate (9CI) (CA INDEX NAME)

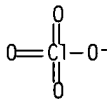
CM 1

CRN 48222-05-5
CMF C23 H19 N4 S2



CM 2

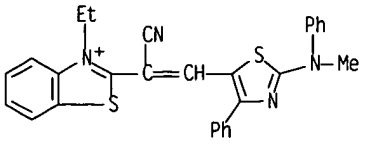
CRN 14797-73-0
CMF Cl O4



RN 42905-83-9 HCAPLUS
CN Benzothiazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-ethyl-, perchlorate (9CI) (CA INDEX NAME)

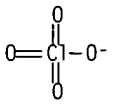
CM 1

CRN 48230-49-5
CMF C28 H23 N4 S2



CM 2

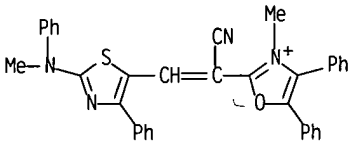
CRN 14797-73-0
CMF Cl O4



RN 42905-84-0 HCAPLUS
CN Oxazolium, 2-[1-cyano-2-[2-(methylphenylamino)-4-phenyl-5-thiazolyl]ethenyl]-3-methyl-4,5-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

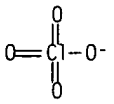
CM 1

CRN 48237-95-2
CMF C35 H27 N4 O S



CM 2

CRN 14797-73-0
CMF Cl O4



L21 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1967:105907 HCAPLUS
DN 66:105907
ED Entered STN: 12 May 1984
TI Sensitizing dyes
IN Knott, Edward B.
PA Kodak-Pathe
SO Fr., 15 pp.
CODEN: FRXXAK
DT Patent
LA French

IC C09B; G03C
CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	FR 1449800		19660819			<--
	GB 1119661			GB		
	GB 1120360			GB		
	US 3395017		19680000	US		<--
	US 3598813		19710000	US		<--
PRAI	US		19640702	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
FR 1449800	IC	C09BIC G03C

GI For diagram(s), see printed CA Issue.
AB Compds. of the general formulas I-VI are sensitizers for photographic emulsions, pH indicators, and wool dyes. A mixture of 1.2 g. 2-HO2CC6H4COCH2Br, 1.4 g. 3-ethoxycarbonylmethyl-5-ethoxymethylenerhodanine, and 10 ml. EtOH was heated to solution on a steam bath, 1.3 ml. Et3N was added, the mixture boiled under reflux for 5 min., and the purple solution treated with concentrated HCl until it turned yellow, giving 1.6 g. (82%) VII (X = CO2, Y = S, R = CH2CO2Et) (VIII), yellow crystalline powder, m. 280.degree. (shrinking and decomposition from 260.degree.), a moderate sensitizer for AgCl-AgBr emulsion with maximum at 585 and 625 nm. Similarly, other VII were prepared (compound number, X, Y, R, % yield, appearance, m.p., and sensitization maximum in nm. given): IX, CO2, S, Et, 73, brilliant yellow crystals) 270.degree. (decompose), -; X, O2C, S, CH2CO2Et, 72, fine orange needles, 261.degree. (EtOH), 530-90; XI, CO, S, Et, 79, maroon plates, - (soften .apprx.165.degree.), 460-560; XII, CO2, O, Et, 33, flat rust needles, 250-60.degree. (decomposition), - (prepared from 3-ethoxymethyleneisochroman-1,4-dione, soft pale yellow needles, m. 152-3.degree.). Condensing 4-HOC6H4CHO with 3-allylrhodanine gave 86% XIII (X = OH, Y = H, R = CH2CH:CH2) (XIV), soft orange needles, m. 167-9.degree. (C6H6-petroleum ether). Similarly was prepared XIII (X = H, Y = OH, R = Et) (XV), yellow orange needles, m. 190.degree., and XVI (compound number R, % yield, appearance, m.p., and sensitization maximum in nm. given): XVII, CN, 88, brown crystals, m. 126.degree. (softens from 75.degree.) (EtOH), 510 (yellow orange on wool); XVIII, CO2Et, 50, pale yellow crystals, 128-30.degree. (AcOH), 510-70; XIX, 4-O2NC6H4, 86, soft green crystals, shrinks at 208-10.degree. (EtOH-Et2O), -(navy blue on wool). IX (3.33 g.) dissolved in a solution of 0.23 g. Na in 25 ml. MeOH, treated with 1.5 ml. MeI, the mixture boiled under reflux for 2 hrs., filtered and washed with alc. Et3N gave 79% IX.MeI, deep maroon crystals, soften from 180.degree., m. 268.degree. (effervescence). Similarly, other methiodides were prepared (% yield, appearance, and m.p. given): VIII.MeI, 60, green bronze threads, 212-14.degree.; XI.MeI, 84.5, brilliant red-orange needles (alc. HCONMe2), soften 245.degree., m. 251-2.degree.; XIX.MeI, 97, steel gray crystalline powder, 268.degree. (decomposition) (HCONMe2). A mixture of 1 g. VIII and 1 ml. Me2SO4 heated at 170.degree. in an oil bath for 5 min. gave a red tar which was pressed against the test-tube walls with a glass rod, Et2O being added repeatedly until the Et2O remained colorless. The quaternization mixture was treated with 0.8 g. 3-ethyl-2-methylbenzothiazolium iodide (XX), 5 ml. pyridine, and 0.8 ml. Et3N, heated on a steam-bath for 5 min. with stirring to dissolve, treated with 25 ml. EtOH, cooled, filtered, and washed with EtOH to give 0.4 g. (29%) I (X = CO2, Z = S) (XXI), bronze threads, m. 261-2.degree.. A solution of XXI in AcOH treated with concentrated HCl gave XXI.HCl, maroon crystals, m. 250-4.degree.. Similarly, other I were prepared (X, Z, % yield, appearance, m.p., and sensitization maximum in nm. given): CO2, CH:CH, 33, green platelets, 190.degree. (soften 186.degree.) (alc. C5H5N), -, [isomer from 1,4-dimethylquinolinium tosylate 26.5% yield, bronze, crystalline powder, m. 276.degree. (alc. HCONMe2)]: CO2, O, 13, green coppery needles, 275.degree. (decompose), 670; O2C, S, 35, deep red crystals (alc. C5H5N), -,

520 and 570; O2C, O, 30, pink needles (1:4 C5H5N-EtOH), 279-83.degree., -; CO, S, 91.5%, maroon threads (alc. HCONMe2), -, 590. Similarly, XIV, Me2SO4, and XX gave 31% green crystals, m. 275.degree. (shrink 260-70.degree.), sensitization maximum 560 nm.; XV, Me2SO4, and XX gave 64% bronze threads (or green crystals), m. 278-9.degree. (alc. HCONMe2), maximum 570-610 nm. Similarly were prepared II (X, Y, Z, R, R', n, % yield, appearance, m.p., and sensitization maximum in nm. given): CO2, S, H, CH2CO2Et, CH2CO2Et, 0, 34, maroon platelets, 238.degree. (decompose 235.degree.), 630-90; O2C, S, H, CH2CO2Et, CH2CO2Et, 0, 51, orange threads, 283.degree. (prior softening), 590-680; O2C, S, H, CH2CO2Et, Et, 0, 43, red orange needles, 301-2.degree., 530-50; CO2, S, H, CH2CO2Et, Et, 0, 86, rust platelets, 255.degree., 625-8.degree.; CO, S, H, Et, Et, 0, 100, black crystalline powder, -(indefinite), 630-80; CO2, S, H, CH2CO2Et, CH2CO2Et, 1, 12.5, green threads, 240.degree., 690-720; CO2, S, SEt, Et, CH2CO2Et, 1, 40, brilliant green crystals, 270-80.degree. (decomposition), -; O2C, S, OEt, CH2CO2Et, CH2CO2Et, 1, 62.5, maroon crystals, 242.degree. (prior softening), 630-710; CO2, S, OEt, CH2CO2Et, CH2CO2Et, 1, 25, maroon threads, 250.degree., 750-90; CO2, O, H, Et, Et, 0, -, orange powder, -(soften 250.degree.). Similarly were prepared III (X = O2C, Y = S, R = CH2CO2Et, Z = H, n = 0), 11% yield, black bronze powder, m. 276.degree., maximum 560-610.degree. nm. IV (X = CO, Y = S, R = Et, Z = H, n = 0), 96% yield, green crystals, m. 271-2.degree. (alc. C5H5N), V (X = OH, Y = H, R = R' = CH2CH:CH2), 28.5% yield, brick red threads, m. 252-3.degree., maximum 530-65 nm.; V (X = H, Y = OH, R = R' = Et), 10% yield, reddish crystalline powder, m. 230.degree., maximum 525 nm., VI (R = CN), 46% yield, maroon threads, m. 196-8.degree., maximum 580 nm.; VI (R = CO2Et), 32% yield, pale green aggregates, shrink 167.degree., maximum 590-660 nm.; and VI (R = 4-O2NC6H4), 90.5% yield, dark green needles, m. 234.degree..

ST PHOTOG SENSITIZERS; SENSITIZERS PHOTOG; BENZOTHIAZOLE PHOTOG SENSITIZERS; BENZOXAZOLE PHOTOG SENSITIZERS; ISOCHROMAN PHOTOG SENSITIZERS; CHROMAN PHOTOG SENSITIZERS

IT Photographic sensitizers
(trinuclear, 4-hydroxycoumarin, 4-hydroxyisocoumarin or 3-hydroxy-1-indanone derivs.)

IT Isocoumarin, 4-hydroxy-, derivs.
RL: USES (Uses)
(as trinuclear methinecyanine dyes)

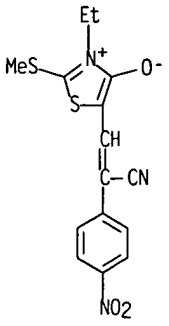
IT 1076-38-6D, Coumarin, 4-hydroxy-, derivs.
RL: USES (Uses)
(as trinuclear methinecyanine dyes)

IT 3730-24-3P 3730-25-4P 3730-26-5P 3730-27-6P **3730-30-1P**
3730-32-3P 3730-35-6P 3730-38-9P 3730-39-0P 3730-40-3P
3730-41-4P 3730-42-5P 3730-44-7P 3730-45-8P 3730-46-9P
3730-47-0P 3730-49-2P 3730-51-6P 3777-44-4P 3777-46-6P
3777-48-8P 3777-49-9P 3777-50-2P 3777-51-3P 3783-20-8P
3783-22-0P 3866-57-7P 14955-08-9P 14955-09-0P 14969-07-4P
14969-08-5P 14969-18-7P 14969-19-8P 14969-23-4P 14969-26-7P
14969-27-8P 15080-78-1P 15715-10-3P 15979-36-9P 15979-37-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

IT **3730-30-1P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of)

RN 3730-30-1 HCAPLUS

CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1965:472618 HCAPLUS
DN 63:72618
OREF 63:**13451g-h,13452a**
ED Entered STN: 22 Apr 2001
TI Complex oxonols and holopolar merocyanines
AU Knott, E. B.
CS Kodak Ltd., Wealdstone, UK
SO J. Chem. Soc., Suppl. (**1964**) 6204-16
DT Journal
LA English
CC 46 (Dyes)
GI For diagram(s), see printed CA Issue.
AB Oxonols derived from 3-substituted 2-thio-4-thiazolidinones and -4-oxazolidinones, yield reactive holopolar betaines (I) on treatment with Me2SO4 or MeI-NaOEt. The betaines condense with reactive methylene compounds to give complex oxonols (II) and with nucleophilic Me groups of cyclic quaternary ammonium salts to give a new type of dye (III), a holopolar merocyanine which is a hybrid of an oxonol anion and a cyanine cation. Higher vinylogs of these dyes have been obtained and the reaction has been extended to acid dyes containing only one O atom in the resonance system.
IT Dyes
(merocyanine, holopolar, 2-thiazolinium derivs. and related compds.)
IT [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester
IT 4-Thiazoline-5-acrylonitrile, 3-ethyl-4-hydroxy-.alpha.-(p-nitrophenyl)-2-thioxo-
(sodium derivative)
IT 4-Thiazoline-3-acetic acid, 4-hydroxy-5-(2-nitro-1-butenyl)-2-thioxo-, ethyl ester
(O-Na derivative)
IT 3730-23-2, 3-Thiazolidineacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2,4-dioxo-, ethyl ester **3730-30-1**, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt 3730-32-3, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester 3730-34-5, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo-, diethyl ester, compound with triethylamine (1:1) 3730-36-7, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinylidene)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-37-8, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinylidene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-43-6, [.DELTA.2,5'-Bithiazolidine]-3,3'-diacetic acid, 5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-4,4'-dioxo-2'-thioxo-, triethyl ester 3730-44-7, 3-Thiazolidineacetic acid,

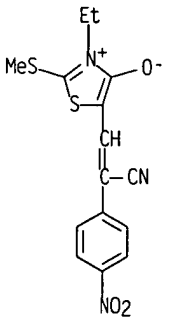
5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2'-thioxo-2,5'-ethanediylidenebis[4-oxo-, diethyl ester 3730-46-9, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 3730-50-5, 3-Thiazolidineacetic acid, 2-(dicyanomethylene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3783-27-5, Malononitrile, [(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)methylene]- 3783-28-6, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-4-hydroxy-2-thioxo-, ethyl ester 3866-57-7, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 97118-77-9, Thiazolinium, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 97299-82-6, Thiazolinium, 3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 98341-80-1, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 98364-53-5, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester
(preparation of)

IT 673432-87-6, 4-Thiazoline-2-thione, 3-ethyl-4-hydroxy-5-(2-nitropropenyl)-
(O-sodium derivative)

IT **3730-30-1**, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt
(preparation of)

RN 3730-30-1 HCAPLUS

CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1965:472617 HCAPLUS

DN 63:72617

OREF 63:**13451c-g**

ED Entered STN: 22 Apr 2001

TI Cyanine dyes with two conjugated chromophores. II

AU Kiprianov, A. I.; Mushkalo, I. L.

CS Inst. Org. Chem., Kiev

SO Zhurnal Obshchei Khimii (**1965**), 1(4), 750-5
CODEN: ZOKHA4; ISSN: 0044-460X

DT Journal

LA Russian

CC 46 (Dyes)

GI For diagram(s), see printed CA Issue.

AB It was shown that in biscyanine dyes with 2 conjugated polymethine chromophores containing quinoline, benzothiazole, or rhodanine nuclei, the same rules apply to displacement of absorption bands as indicated in the previous abstract 2-(Methylthio)lepidine.Me2SO4 (I) and 2-

methylbenzothiazole.Me2SO4 heated in EtOH-Et3N 0.5 h. gave 47% 1',4',3-trimethylthia-2'-cyanine Me sulfate (II), m. 265.degree.. Simultaneous addition of Et3N-EtOH and I in EtOH to a boiling solution of quinaldine methosulfate in EtOH and heating 10 min. gave, after evaporation, 57% 1,1',4'-trimethyl-2,2'-cyanine Me sulfate m. 1805.degree., which with 1-methyl-2-(formylmethylene)-1,2-dihydroquinoline in pyridine-Ac2O gave 2.7% 1-methyl-2-[(1'-methyl-2'-quinolylidene)methyl]-4-[(1''-methyl-2''-quinolylidene)propenyl]quinolinium perchlorate, decomposed 270.degree.. II and 2-(formylmethylene)-3-methylbenzothiazoline similarly gave 29% 1-methyl-2-[(3'-benzothiazolinylidene)methyl]-4-[(3''-methyl-2''-benzothiazolinylidene)propenyl] quinolinium Me sulfate, decomposed 300.degree.. Similarly was prepared 9.4% 1-methyl-2-[(3'methyl - 2' - benzothiazolinylidene)methyl] - 4 - [(1''-methyl-2''-quinolylidene)propenyl]quinolinium iodide, decomposed 320.degree.. 2-[(3'-Phenyl-4'-oxothiazolin-2'-ylidene)methyl]-3-ethylbenzothiazolium iodide heated 4 h. with Me2CO in AcOH-AcONa gave 40% 2-[(3'-phenyl-4'-oxo-5'-isopropylidene-2'-thiazolidinylidene)methyl]-3-ethylbenzothiazolium iodide, decomposed 2523.degree.; it readily added EtOH at its double bond and its spectrum was altered thereby. 3-Phenyl-5-[(3'-ethylbenzothiazolin-2'-ylidene)ethylidene]rhodanine, decomposed 285.degree., heated with Me2SO4 at 130.degree., then treated with 2-methylbenzothiazole.Et tosylate in EtOH-Et3N gave 25% 3-ethyl-2-[[3'-phenyl-4'-oxo-5'-[(3''-ethyl-2''-benzothiazolinylidene)ethylidene]-2'-thiazolidinylidene]methyl]benzothiazolium iodide, decomposed 265.degree.. Spectra of the dyes were reported.

IT Dyes
(bis(cyanine), benzothiazolium, quinolinium and rhodanine derivs.)

IT Visible spectra
Visible spectra
(of bis(cyanine) dyes)

IT 4-Thiazoline-5-acrylonitrile, 3-ethyl-4-hydroxy-.alpha.-(p-nitrophenyl)-2-thioxo-, sodium derivative
Benzothiazolium, 2-[3-[2-[3-(2-benzothiazolyl)allylidene]-3-ethyl-6-benzothiazolinyl]-4-methyl-4-thiazolin-2-ylidene]propenyl]-3-ethyl-, perchlorate, methoperchlorate
Benzothiazolium, 2-[[3-[2-(2-benzothiazolylmethylene)-3-methyl-6-benzothiazolyl]-4-methyl-4-thiazolin-2-ylidene]methyl]-3-methyl-, perchlorate, methoperchlorate
Benzoxazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester
Benzoxazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester
Thiazolinium, 3-(carboxymethyl)-5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, di-Et ester

IT Benzothiazolium, 2-[3-[3-[2-[3-(2-benzothiazolyl)allylidene]-3-ethyl-6-benzothiazolinyl]-4-methyl-4-thiazolin-2-ylidene]propenyl]-3-ethyl-, perchlorate, ethoperchlorate
(reactive, dibenzenesulfonamide-containing and their metal complexes, cotton)

IT 977-96-8, Quinolinium, 1-ethyl-2-[(1-ethyl-4(1H)-quinolylidene)methyl]-, iodide 3730-23-2, 3-Thiazolidineacetic acid, 5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2,4-dioxo-, ethyl ester 3730-28-7, Isocoumarin, 3-[(3-ethyl-2,4-dioxo-5-thiazolinylidene)methyl]-4-hydroxy- **3730-30-1**, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt 3730-34-5, Triethylamine, compound with di-Et 5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4,4'-dioxo-2'-thioxo[.DELTA.2,5'-bithiazolidine]-3,3'-diacetate (1:1) 3730-35-6, Rhodanine, 3-ethyl-5-[3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-4-oxo-2-thiazolidinylidene]- 3730-36-7, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-oxazolidinylidene)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-37-8, 3-Thiazolidineacetic acid, 2-(3-ethyl-4-oxo-2-thioxo-5-

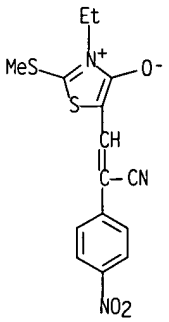
oxazolidinylidene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-38-9, Isocoumarin, 3-[[3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-oxo-5-oxazolidinylidene]methyl]-4-hydroxy- 3730-39-0, 3-Thiazolidineacetic acid, 2-[2-(ethylthio)-5-oxo-2-thiazolin-4-ylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-40-3, 4-Thiazolidinone, 2-[2-(diphenylamino)-4-oxo-2-thiazolin-5-ylidene]-3-ethyl-5-[(3-hydroxy-1-oxo-inden-2-yl)methylene]- 3730-41-4, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-hydroxy-, ethyl ester 3730-42-5, 4-Thiazoline-5-acrylonitrile, 3-ethyl-2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)-4-hydroxy-.alpha.-(p-nitrophenyl)- 3730-45-8, 3-Thiazolidineacetic acid, 5-[2-[3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]-1-(ethylthio)ethylidene]-4-oxo-2-thioxo-, ethyl ester 3730-46-9, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 3730-47-0, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester 3730-50-5, 3-Thiazolidineacetic acid, 2-(dicyanomethylene)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-, ethyl ester 3730-51-6, Rhodanine, 3-allyl-5-[3-allyl-5-(p-hydroxybenzylidene)-4-oxo-2-thiazolidinylidene]- 3730-52-7, Rhodanine, 3-ethyl-5-[3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]-4-oxo-2-thiazolidinylidene]- 3757-71-9, Quinolinium, 1-methyl-2-[(3-methyl-2-benzothiazolinylidene)methyl]-4-[3-(3-methyl-2-benzothiazolinylidene)propenyl]-, methyl sulfate 3757-72-0, Quinolinium, 1-methyl-2-[(3-methyl-2-benzothiazolinylidene)methyl]-4-[3-(1-methyl-2(1H)-quinolylidene)propenyl]-, iodide 3777-44-4, Benzothiazolium, 2-[[3-allyl-5-(p-hydroxybenzylidene)-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt 3777-45-5, Benzothiazolium, 3-ethyl-2-[[3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-, hydroxide, inner salt 3777-46-6, Benzothiazolium, 2-[[5-(2,2-dicyanovinyl)-3-ethyl-4-hydroxy-4-thiazolin-2-ylidene]methyl]-3-ethyl-, hydroxide, inner salt 3777-47-7, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[3-[3-(carboxymethyl)-4-hydroxy-2-thioxo-4-thiazolin-5-yl]-3-ethoxy-1-methylallylidene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, di-Et ester 3777-49-9, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, hydroxide, inner salt, Et ester 3777-51-3, Benzothiazolium, 3-ethyl-2-[[3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-4-oxo-2-thiazo lidinylidene]methyl]-, hydroxide, inner salt 3783-10-6, Sodium, [[3-(carboxymethyl)-5-(2-nitro-1-butenyl)-2-thioxo-4-thiazolin-4-yl]oxy]-, ethyl ester 3783-12-8, Quinolinium, 1,4-dimethyl-2-[(1-methyl-2(1H)-quinolylidene)methyl]-, methyl sulfate 3783-13-9, Benzothiazolium, 3-ethyl-2-[(5-isopropylidene-4-oxo-3-phenyl-2-thiazolidinylidene)methyl]-, iodide 3783-14-0, Rhodanine, 5-[2-(3-ethyl-2-benzothiazolinylidene)ethylidene]-3-phenyl- 3783-15-1, Benzothiazolium, 3-ethyl-2-[[5-[2-(3-ethyl-2-benzothiazolinylidene)ethylidene]-4-oxo-3-phenyl-2-thiazolidinylidene]methyl]-, iodide 3783-16-2, Sodium, [[3-ethyl-5-(2-nitropropenyl)-2-thioxo-4-thiazolin-4-yl]oxy]- 3783-17-3, Quinolinium, 1,4-dimethyl-2-[(1-methyl-2(1H)-quinolylidene)methyl]-, iodide 3783-18-4, Quinolinium, 1-ethyl-2,4-bis[(1-ethyl-2(1H)-quinolylidene)methyl]-, iodide 3783-20-8, Rhodanine, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]- 3783-22-0, Rhodanine, 3-allyl-5-(p-hydroxybenzylidene)- 3783-23-1, Rhodanine, 3-ethyl-5-[(4-hydroxy-1-naphthyl)methylene]- 3783-24-2, Rhodanine, 3-ethyl-5-[(2-hydroxy-4-phenyl-5-thiazolyl)methylene]- 3783-25-3, Rhodanine, 3-ethyl-5-[(2-hydroxy-4-methyl-5-thiazolyl)methylene]- 3783-26-4, Rhodanine, 3-ethyl-5-[(2-mercapto-4-methyl-5-thiazolyl)methylene]- 3783-27-5, Malononitrile, [(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)methylene]- 3783-28-6, 4-Thiazoline-5-acrylic acid, .alpha.-cyano-3-ethyl-4-hydroxy-2-thioxo-, ethyl ester 3783-29-7,

Rhodanine, 3-ethyl-5-[3-(3-ethyl-4-hydroxy-2-thioxo-4-thiazolin-5-yl)-2-nitroallylidene]-, compound with triethylamine (1:1) 3808-45-5, Rhodanine, 3-ethyl-5-[2-[3-[3-ethyl-2-[2-(3-ethyl-4-oxo-2-thioxo-5-thiazolidinylidene)ethylidene]-6-benzothiazolinyl]-4-methyl-4-thiazolin-2-ylidene]ethylidene]- 3808-46-6, Quinolinium, 1,4-dimethyl-2-[(3-methyl-2-benzothiazolinylidene)methyl]-, methyl sulfate 3808-56-8, Quinolinium, 1-ethyl-2,4-bis[(1-ethyl-2-benzothiazolinylidene)methyl]-, iodide 3840-98-0, Quinolinium, 1-methyl-2-[(1-methyl-2(1H)-quinolylidene)methyl]-4-[3-(1-methyl-2(1H)-quinolylidene)propenyl]-, perchlorate 3866-57-7, 3-Thiazolidineacetic acid, 2-[2-[3-(carboxymethyl)-4-oxo-2-thioxo-5-thiazolidinylidene]-2-ethoxyethylidene]-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-, diethyl ester 5169-32-4, 3-Thiazolidineacetic acid, 5,5'-(1-ethoxy-3-methyl-1-propen-1-yl-3-ylidene)bis[4-oxo-2-thioxo-, diethyl ester 14969-19-8, Benzothiazolium, 2-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-3-ethyl-, chloride, Et ester 92906-04-2, Sodium, [[5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-2-thioxo-4-thiazolin-4-yl]oxy]- 97118-77-9, Thiazolinium, 3-ethyl-5-[(3-hydroxy-1-oxoinden-2-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 97299-82-6, Thiazolinium, 3-ethyl-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt 98341-80-1, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-2-oxo-2H-1-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 98364-53-5, Thiazolinium, 3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-2-(methylthio)-4-oxo-2-, hydroxide, inner salt, Et ester 100436-86-0, 3-Thiazolidineacetic acid, 5,5'-(1-ethoxy-3-methyl-1-propen-1-yl-3-ylidene)bis[4-oxo-2-thioxo-, diethyl ester, sodium derivative 103006-16-2, Quinolinium, 4-[[3-(carboxymethyl)-5-[(4-hydroxy-1-oxo-1H-2-benzopyran-3-yl)methylene]-4-oxo-2-thiazolidinylidene]methyl]-1-methyl-, hydroxide, inner salt, Et ester
(preparation of)

IT **3730-30-1**, Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt
(preparation of)

RN 3730-30-1 HCAPLUS

CN Thiazolium, 5-(.beta.-cyano-p-nitrostyryl)-3-ethyl-4-hydroxy-2-(methylthio)-, hydroxide, inner salt (8CI) (CA INDEX NAME)



L21 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1961:58344 HCAPLUS

DN 55:58344

OREF 55:**11152b-h**

ED Entered STN: 22 Apr 2001

TI Cyanine dyes

IN Coenen, Max; Weissel, Oskar

PA Farbenfabriken Bayer Akt.-Ges.

DT Patent

LA Unavailable

NCL 22E
CC 5 (Photography)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 1073662		19600121	DE		<--
	GB 897197			GB		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 1073662	NCL	22E

GI For diagram(s), see printed CA Issue.

AB Cyanine dyes are described having the general formula I, where n = 0 or 1, R = H, alkyl, or alkoxy, R' = H, CN, or another substituent, X represents a double alkylated C, and N a singly alkylated N atom. The I are valuable sensitizers for photographic Ag halide emulsions. 1,3,3-Trimethyl-2-methyleneindoline-.omega.-aldehyde (II) (5.0 g.), 5.0 g. 1,1,3-trimethyl-2-cyanomethyleneindoline (III), and 30 cc. C6H6 treated for 2 min. with 3.0 g. SOCl2 gave 9.0 g. 2-(1,3,3-trimethylindole)-2'-(1,3,3-trimethylindole)-.alpha.-cyanotrimethinecyanine chloride (IV), crystals with a metallic luster, orange in MeOH. The 5-MeO derivative (22.8 g.) of III and 20.1 g. II in 40 cc. CHCl3 treated at 65.degree. during 15 min. with 15.3 g. POCl3, refluxed 15 min., and evaporated yielded 44.5 g. of the 2-(1,3,3-trimethyl-5-methoxyindole) analog of IV, bluish red in MeOH. The 5-Me derivative (10.6 g.) (V) of III, 10.8 g. 5-Me derivative of II, 20 cc. CHCl3, and 7.5 g. POCl3 yielded similarly 18.3 g. of the 5,5'-di-Me derivative of IV, scarlet-red in MeOH. 1,3,3-Trimethyl-2-(.alpha.,.gamma.-dicyanopropenylidene)indoline (5.0 g.), 4.0 g. II, and 3.0 g. POCl3 in 25 cc. CHCl3 refluxed 20 min. and evaporated, and the residue dissolved in 150 cc. MeOH and repptd. with NH4ClO4 gave 7.5 g. .alpha.,.gamma.-dicyanopentamethinecyanine perchlorate analog of IV, blue crystals, violet in MeOH. V (10.6 g.) and 10.1 g. II in 20 cc. CHCl3 treated in 5 min. with 7.6 g. POCl3 yielded 21.5 g. of the 2-(1,3,3,5-tetramethylindole) analog of IV, brown powder, red-orange in MeOH. The 5-Cl derivative (11.7 g.) of III and 10.1 g. II in 20 cc. CHCl3 with 7.6 g. POCl3 gave 23.2 g. of the 2-(1,3,3-trimethyl-5-chloroindole) analog of IV, brown powder, orange in MeOH. III (5.0 g.), 6.0 g. 1-methyl-2-phenyl-3-indolecarboxaldehyde, 10 cc. CHCl3, and 3.0 g. SOCl2 refluxed 10 min. and evaporated and the residue dissolved in 100 cc. MeOH and repptd. with NH4ClO4 gave 12.5 g. 2-(1,3,3-trimethylindole)-3'-(1-methyl-2-phenylindole)-.alpha.-cyanodimethinecyanine perchlorate, brown powder, orange in MeOH. III (5.0 g.), 3.7 g. p-Me2NC6H4CHO, 10 cc. CHCl3, and 3.0 g. POCl3 refluxed 5 min. and evaporated, and the residue repptd. from MeOH with NH4ClO4 gave 6.8 g. 2-(4-dimethylamino-.beta.-cyanostyryl)-1,3,3-trimethylindolinium perchlorate, violet-red in MeOH.

IT Photography
(sensitizers (super-), carbocyanine dyes and merocyaninedyes as)

IT Photography
(sensitizers, cyanine dyes as)

IT 3H-Indolium compounds, 2-(1-cyano-p-diethylaminostyryl)-1,3,3-trimethyl-, perchlorate
3H-Indolium compounds, 2-[1-cyano-2-(1-methyl-2-phenylindol-3-yl)vinyl]-1,3,3-trimethyl-, perchlorate
3H-Indolium compounds, 2-[3,5-dicyano-5-(1,3,3-trimethyl-2-indolinylidene)-1,3-pentadienyl]-1,3,3-trimethyl-, perchlorate
3H-Indolium compounds, 2-[3-(5-chloro-1,3,3-trimethyl-2-indolinylidene)-3-cyanopropenyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinylidene)propenyl]-1,3,3,5-tetramethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinylidene)propenyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(1,3,3-trimethyl-2-indolinylidene)propenyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-

indolinylidene)propenyl]-1,3,3-trimethyl-, chloride
Dimethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-3'-(1'-methyl-2'-phenylindole)-.alpha.-cyano-
Pentamethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha...gamma.-dicyano-
Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3',5'-tetramethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
IT 99071-73-5, Rhodanine, 3-ethyl-5-(4(1H)-pyridylidene)- (derivs., as photographic supersensitizers)

L21 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:58343 HCAPLUS
DN 55:58343
OREF 55:**11152b**
ED Entered STN: 22 Apr 2001
TI Infrakrasnaya fotografiya (Infrared Photography)
AU Solov'ev, S. M.
SO (**1960**) Publisher: (Iskusstvo, Moscow), 215 pp.
DT Book
LA Unavailable
CC 5 (Photography)
AB Unavailable
IT Photography
(books, Infrared)

L21 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:58342 HCAPLUS
DN 55:58342
OREF 55:**11152a-b**
ED Entered STN: 22 Apr 2001
TI Laboratornaya obrabotka fotomaterialov (Laboratory Processing of Photographic Materials)
AU Katsenelenbrogen, E. D.; Iofis, E. A.; et al.
SO (**1959**) Publisher: (Iskusstvo, Moscow), 206 pp.
DT Book
LA Unavailable
CC 5 (Photography)
AB Unavailable
IT Photography
(books, Laboratory Processing of Photographic Materials)

L21 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:53064 HCAPLUS
DN 55:53064
OREF 55:**10164e-i,10165a-d**
ED Entered STN: 22 Apr 2001
TI Methine dyes
IN Kendall, John D.; Waddington, Henry R. J.; Duffin, Geo. F.
PA Ilford Ltd.
DT Patent
LA Unavailable
CC 5 (Photography)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	GB 856068		19601214	GB		<--

CLASS
PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

GB 856068

AB The preparation of methine and polymethine photosensitizing dyes is described. The intermediate 7-diethylaminocoumarin-4-acetic acid (I), m. 159-60.degree. (decompose), was prepared as follows: A mixture of Et acetonedicarboxylate 42, freshly fused anhydrous ZnCl2 36, and m-diethylaminophenol 36 g., in EtOH 120 ml. was refluxed 17 hrs., poured into 500 ml. H2O plus 2 ml. 2N HCl, and the oil was separated and washed with H2O. The oil was dissolved in 500 ml. Et2O, washed successively with 1N NaOH and H2O, dried over Na2SO4, and the Et2O was evaporated The product was dissolved in EtOAc, and addition of petr. ether precipitated I Et ester, m. 80-2.degree.. This was heated 15 min. with 2N Na2CO3 and alc., cooled, H2O was added, and the solution was filtered. Addition of 2N HCl to max precipitation gave crude product, which was recrystd. from 50% aqueous alc. to give I. 7-Methylcoumarin-4-acetic acid (II), m. 204-6.degree. (decompose), was prepared from m-cresol, citric acid, and H2SO4, and 7-methoxycoumarin-4-acetic acid (III), m. 200.degree. (decompose), was prepared from resorcinol mono-Me ether, citric acid, and H2SO4. 7-Hydroxy-4-[(3-methyl-2-benzothiazolinylidene)methyl]coumarin, m. 313-14.degree. (EtOH), was prepared by refluxing 7-hydroxycoumarin-4-acetic acid 0.88 g., 2-methylthiobenzothiazole-MeI (IV) 1.3 g., pyridine 10 ml., and Et3N 2 ml. for 1 hr. and precipitating with H2O. Other dyes were similarly prepared from the following reagents (m.p., spectral limit, and spectral maximum in A. given): 7-methyl-4-[(3-methyl-2-benzothiazolinylidene)methyl]coumarin, 237-9.degree., 5200, 4400, from II and IV; 7-methyl-4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]coumarin, 235-7.degree., 6400, 5200-5800, from II and 2-(2-acetylanilinovinyl)benzothiazole-EtI (V); 7-diethylamino-4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]coumarin, 234-6.degree., 6300, 5000-5800.degree., from I and V; 7-methoxy-4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]coumarin, 203-5.degree., 6300, 5000-5800, from III and V; 7-methyl-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 228-30.degree., 6000, 4200, from II and 2-(2- acetylanilinovinyl)benzoxazole-EtI (VI); 7-diethylamino-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 190-2.degree., 6000, 5400, from I and VI; 7-methoxy-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 189-91.degree., 6000, 4200-5400, from III and VI; 7-methyl-4-[3-(1,3,3-trimethylindoleninylidene)propenyl]coumarin, 195-7.degree., 5600, 5400, from II and 2-(2-ethylthiovinyl)-1,3,3-trimethylindoleninium metho-p-toluenesulfonate (VII); 7-diethylamino-4-[3-(1,3,3-trimethylindoleninylidene)propenyl]coumarin, 203-5.degree., 5600, 5400 from I and VII; 7-methyl-4-[3-(5-methylthio-3-methyl-1,3,4-thiadiazolin-2-ylidene)-propenyl]coumarin, 215.degree. (decompose), -, -, from II and 2-(2-acetylanilinovinyl)-5-methylthio-3-methyl-1,3,4-thiadiazolium iodide; 7-methyl-4-[3-(4,4-dimethyl-1-ethyl-2-pyrrolidinylidene)propenyl]coumarin, 178.degree., -, -, from II and 2-(2-acetylanilinovinyl)-4,4-dimethyl-1-ethyl-1-pyrrolinium iodide; 7-methyl-4-[3-(5,6-dimethyl-3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 237.degree., -, -, from II and 2-(2-acetylanilinovinyl)-5,6-dimethyl-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(5-chloro-3-ethyl-2-benzothiazolinylidene)propenyl]coumarin, 262.degree., -, -, from II and 2-(2-acetylanilinovinyl)-5-chloro-3-ethylbenzothiazolium iodide; 5,6-benzo-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 190.degree., -, -, from 5,6-benzocoumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzoxazolium iodide; 6,7-dimethyl-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]coumarin, 245.degree., -, -, from 6,7-dimethylcoumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(6-methoxy-3-ethylbenzoxazolinylidene)propenyl]coumarin, 222.degree., -, -, from II and 2-(2-acetylanilinovinyl)-6-methoxy-3-ethylbenzoxazolium iodide; 4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]coumarin, 235.degree., -, -, from coumarin-4-acetic acid and 2-(2-acetylanilinovinyl)-3-ethylbenzothiazolium iodide; and 7-methyl-4-[3-(3-methyl-2-

thiazolidinylidene)propenyl] coumarin, 192.degree., -, -, from II and 2-(2-acetylanilinovinyl)-2-methyl-2-thiazoline p-toluenesulfonate.
IT Photography
(sensitizers, methine and polymethine dyes as)
IT 1-Naphthaleneacrylic acid, .beta.-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]-2-hydroxy-, .delta.-lactone
IT 4712-45-2, .DELTA.2-1,3,4-Thiadiazoline
(derivs., as cyanine dyes)
IT 50402-83-0, 2H-1-Benzopyran-4-acetic acid, 7-methyl-2-oxo- 62935-72-2, 2H-1-Benzopyran-4-acetic acid, 7-methoxy-2-oxo- 88590-30-1, Umbelliferone, 4-(3-methyl-2-benzothiazolinylidenemethyl)- 94301-09-4, Coumarin, 7-methyl-4-(3-methyl-2-benzothiazolinylidenemethyl)- 100956-47-6, 2H-1-Benzopyran-4-acetic acid, 7-diethylamino-2-oxo- 101582-94-9, 2H-1-Benzopyran-4-acetic acid, 7-diethylamino-2-oxo-, ethyl ester 102469-40-9, Coumarin, 4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]- 102469-41-0, Coumarin, 7-methyl-4-[3-(3-methyl-2-benzothiazolinylidene)propenyl]- 102549-19-9, Coumarin, 4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]-7-methyl- 102549-25-7, Coumarin, 4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]-8-methyl- 102592-69-8, Coumarin, 4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]-5,6-dimethyl- 102592-76-7, Coumarin, 4-[3-(3-ethyl-6-methoxy-2-benzoxazolinylidene)propenyl]-7-methyl- 102597-15-9, Coumarin, 4-[3-(1-ethyl-4,4-dimethyl-2-pyrrolidinylidene)propenyl]-7-methyl- 102703-97-9, Coumarin, 4-[3-(5-chloro-3-ethyl-2-benzothiazolinylidene)propenyl]-7-methyl- 102951-01-9, Coumarin, 7-methyl-4-[3-(1,3,3-trimethyl-2-indolinylidene)propenyl]- 102951-95-1, Coumarin, 7-diethylamino-4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]- 102951-96-2, Coumarin, 7-diethylamino-4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]- 103033-51-8, Coumarin, 7-diethylamino-4-[3-(1,3,3-trimethyl-2-indolinylidene)propenyl]- 114224-55-4, Coumarin, 7-methyl-4-[3-[4-methyl-2-(methylthio)-.DELTA.2-1,3,4-thiadiazolin-5-ylidene]propenyl]- 114280-08-9, Coumarin, 4-[3-(3-ethyl-5,6-dimethyl-2-benzoxazolinylidene)propenyl]-7-methyl- 115020-13-8, Herniarin, 4-[3-(3-ethyl-2-benzoxazolinylidene)propenyl]- 115120-73-5, Herniarin, 4-[3-(3-ethyl-2-benzothiazolinylidene)propenyl]- 124291-10-7, .DELTA.2,.epsilon.-Benzoxazolinesorbic acid, 3-ethyl-.beta.-(2-hydroxy-1-naphthyl)-, .delta.-lactone
(preparation of)

L21 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:53063 HCAPLUS
DN 55:53063
OREF 55:**10164a-e**
ED Entered STN: 22 Apr 2001
TI Cyanine dyes
IN Coenen, Max; Weissel, Oskar
PA Farbenfabriken Bayer Akt.-Ges.
DT Patent
LA Unavailable
NCL 22E
CC 5 (Photography)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 1070316		19591203	DE		<--
	GB 897195			GB		
	US 3090782		1963	US		<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 1070316	NCL	22E

GI For diagram(s), see printed CA Issue.
AB Cyanine dyes are repd. from aldehydes of the general formula I, where R is

hydrogen, alkyl, choline, alkoxy, or another organic radical, R' is H, CN, or group usual in cyanines, X is dialkylated C, Y an alkylated N atom, and n is 0 or 1, by condensing with methylene group-containing bases or quaternary cyclammonium salts in presence of acids and inert solvents. Thus, [2-(1,3,3-trimethyl-5-methoxyindole)] [2-(1,3,3-trimethyl-5-methoxyindole)]-.alpha.-cyanotrimethinecyanine chloride is prepared by treating 1,3,3-trimethyl-5-methoxy-2-cyanomethyleneindoline-.omega.-aldehyde (II) 12.8 and 1,3,3-trimethyl-5-methoxy-2-methyleneindoline (III) 10.2 with POCl3 7.5 g. in 20 ml. CHCl3 to give 19.2 g. greenish crystals, bluish red in H2O. Similar dyes are prepared (reagents, color, and solvent given): 1,3,3,5-tetramethyl-2-cyanomethylindoline-.omega.-aldehyde, 1,3,3,5-tetramethyl-2-methyleneindoline, POCl3, scarlet, H2O; II, 1,3,3-trimethyl-2-methyleneindoline (IV), POCl3, bluish red, H2O; 1,3,3-trimethyl-5-chloro-2-cyanomethyleneindoline-.omega.-aldehyde, 1,3,3-trimethyl-5-chloro-2-methyleneindoline, POCl3, scarlet, H2O; 1,3,3-trimethyl-2-cyanomethyleneindoline-.omega.-aldehyde (V), 1,3,3-trimethyl-5-chloro-2-cyanomethyleneindoline, SOCl2 red-orange H2O; II, 1,3,3,5-tetramethyl-2-cyanomethyleneindoline, SOCl2 bluish red, H2O; bluish red; 1,3,3-trimethyl-2-(1,3-dicyanopropenylidene)indoline-.omega.-aldehyde, IV, POCl3, violet, MeOH; II, 1,2-dimethylbenzothiazolium methosulfate, Et3N, HOAc, bluish red MeOH; V, 1-methyl-2-phenylindole, POCl3 orange red, MeOH, and V, 2-methylindole, POCl3, orange red, MeOH.

IT Dyes
(cyanine)

IT Photography
(cyanine dyes for)

IT 3H-Indolium compounds, 2-[1,3-dicyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinylidene)propenyl]-1,3,3,5-tetramethyl-, chloride
3H-Indolium compounds, 2-[1-cyano-2-(1-methyl-2-phenylindol-3-yl)vinyl]-1,3,3-trimethyl-, perchlorate
3H-Indolium compounds, 2-[1-cyano-2-(2-methylindol-3-yl)vinyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3,5-dicyano-5-(1,3,3-trimethyl-2-indolinylidene)-1,3-pentadienyl]-1,3,3-trimethyl-, perchlorate
3H-Indolium compounds, 2-[3-(5-chloro-1,3,3-trimethyl-2-indolinylidene)-1,3-dicyanopropenyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(1,3,3,5-tetramethyl-2-indolinylidene)propenyl]-1,3,3,5-tetramethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinylidene)propenyl]-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinylidene)propenyl]-5-methoxy-1,3,3-trimethyl-, chloride
3H-Indolium compounds, 5-chloro-2-[3-(5-chloro-1,3,3-trimethyl-2-indolinylidene)-3-cyanopropenyl]-1,3,3-trimethyl-, chloride
Benzothiazolium compounds, 2-[3-cyano-3-(5-methoxy-1,3,3-trimethyl-2-indolinylidene)propenyl]-3-methyl-, methyl sulfate
Dimethinecyanine chloride, 2-(1,3,3-trimethylindole)-3'-(2'-methylindole)-.alpha.-cyano-
Dimethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-3'-(1'-methyl-2'-phenylindole)-.alpha.-cyano-
Pentamethinecyanine perchlorate, 2-(1,3,3-trimethylindole)-2'-(1',3',3'-trimethylindole)-.alpha.,.gamma.-dicyano-
Trimethinecyanine chloride, 2-(1,3,3,5-tetramethylindole)-2'-(1',3',3',5'-tetramethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethyl-5'-chloroindole)-.alpha.-cyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-chloroindole)-2'-(1',3',3'-trimethylindole)-.alpha.,.gamma.-dicyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3',5'-tetramethylindole)-.alpha.,.gamma.-dicyano-
Trimethinecyanine chloride, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1',3',3'-trimethylindole)-.alpha.-cyano-
Trimethinecyanine chloride, [2-(1,3,3-trimethyl-5-methoxyindole)][2-(1,3,3-trimethyl-5-methoxylindole)]-.alpha.-cyano-

Trimethinecyanine methyl sulfate, 2-(1,3,3-trimethyl-5-methoxyindole)-2'-(1'-methylbenzothiazole)-.alpha.-cyano-

L21 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:6027 HCAPLUS
DN 55:6027
OREF 55:**1152g-h**
ED Entered STN: 22 Apr 2001
TI Kinetics of isotope exchange in heterogeneous systems with multiple equilibriums
AU Scheffer, F.; Ulrich, B.; Benecke, P.; Sendler, W.
CS Univ. Gottingen, Germany
SO Naturwissenschaften (**1960**), 47, 321
CODEN: NATWAY; ISSN: 0028-1042
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
AB The exchange of P between hydroxyapatite and a solution of (P32O4)--- was determined and graphically analyzed into 4 kinetically-distinct reactions. There were 4 phosphate fractions in the surface of the apatite. The amts. (mg. P/g. apatite) and exchange consts. (mg. P/g. apatite. min.) were: 1.61, 1.3; 0.97, 5.4 .times. 10-2; 1.10, 5.7 .times. 10-3; and 1.16, 6.1 .times. 10-4, resp.
IT Reaction kinetics and(or) velocity
(of exchange, of P between hydroxylapatite and phosphates)
IT Exchange reactions
(of phosphorus, between hydroxylapatite and phosphates)
IT Phosphates
(phosphorus exchange between hydroxylapatite and)
IT 7723-14-0, Phosphorus
(exchange of, between hydroxylapatite and phosphates)
IT 1306-06-5, Hydroxylapatite
(phosphorus exchange between phosphates and)

L21 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1961:6026 HCAPLUS
DN 55:6026
OREF 55:**1152e-g**
ED Entered STN: 22 Apr 2001
TI Gas-phase reactions of recoil carbon-14 in anhydrous ammonia
AU Yang, John Y.; Wolf, Alfred P.
CS Brookhaven Natl. Lab., Upton, NY
SO Journal of the American Chemical Society (**1960**), 82, 4488-92
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA Unavailable
CC 2 (General and Physical Chemistry)
AB Neutron-capture reactions of N in anhydrous NH3 were studied in the gas phase. A unique feature of the reactions was a high and specific yield of methane-C14. A process of H abstraction was proposed to explain results. The yield was not affected by the addition of inert gases. Carbon-14 assay was obtained in a Bernstein-Ballentine counter in the proportional region. Qual. detection and quant. determination of carbon-14 activities was accomplished by the Wolfgang and Rowland gas chromatog. flow counting method. There was no evidence of free-radical products. Reactions of the recoil carbon in CH4 and methylamine gave a complex mixture of radioactive products.
IT Ethane, labeled with C14
(formation from recoil C14 reactions in NH3 and methylamine)
IT Methylamine-C14
(formation of, from recoil C14 reactions in methylamine)
IT 74-89-5, Methylamine
(carbon-14 (recoil) reaction in)
IT 7664-41-7, Ammonia
(carbon-14 recoil reaction in)

IT 2772-68-1, Methane-C14
(formation and reactions of, in neutron-bombarded NH3)
IT 51-90-1, Carbon-C14 dioxide
(formation from recoil C14 reactions in NH3)
IT 7183-57-5, Acetonitrile-2-C14
(formation of, from recoil C14 reactions in methylamine)
IT 14762-75-5, Carbon, isotope of mass 14
(gas-phase reactions of recoil, in NH3)
IT 7727-37-9, Nitrogen
(neutron capture by, in NH3, recoil C14 reactions from)
IT 12586-31-1, Neutron
(nitrogen bombardment by, in NH3, recoil C14 reactions from)

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